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AUTHOR Starrfield, Susan
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ABSTRACT

A study was conducted in 1989 at South Mountain Community College (SMCC) to identify first-time college students who had earned 12 semester hours of transferable credits at SMCC since 1984 and to identify the students within this group who actually transferred. Once these students were identified, they were described in terms of age, ethnicity, sex, grade point average (GPA), entry status, marital status, high school graduation status, goal upon SMCC entrance, number of Maricopa Community College District colleges attended, credits earned at SMCC, developmental credits earned at SMCC, and college-level credits earned. In addition, their progress was tracked through their enrollment history at SMCC and in the district, transfer information provided by state colleges and universities, and telephone interviews focusing on student satisfaction with services and programs and their educational and occupational activities and goals. From the 628 new incoming students who entered SMCC in fall 1984, 92 were identified as having completed more than 12 credit hours at SMCC in college-level courses. Of this group, 12 were identified as transfer students by the universities (7 Arizona institutions), and 32 agreed to participate in the telephone survey. Selected findings included the following: (1) before attending SMCC, 46.9% of students had primarily been working and 31.3% had primarily been attending high school; and 78.1% were working full-time at the time of the survey; (2) 31.3% indicated that it was very likely or somewhat likely that they would transfer to a four-year institution within the next five years, while 40.6% indicated that it was at least somewhat likely that they would earn a four-year degree over the same time period; and (3) students tended to be satisfied or dissatisfied in equal proportions with their goal achievement at SMCC, with goal strength and GPA the best predictors of perceived goal achievement. A series of recommendations and a literature review are included. (JMC)

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**A Description and Survey of A Cohort of Community College
Students with Explanations of their Perceived Satisfaction,
Goal Attainment, and Personal Growth**

Final Report to the Ford Foundation

**Submitted to
Alison Bernstein
The Ford Foundation**

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Prepared by

**Susan Starrfield, Ph.D.
Research Assistant**

**South Mountain Community College
Phoenix, Arizona 85040**

1991

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ABSTRACT

A cohort was identified consisting of 92 students who entered South Mountain Community college (SMCC) in 1984 with no prior college experience and who earned 12 transferrable credits by 1990. SMCC was established to serve a minority population in an urban setting. Part of its mission as one of the ten Maricopa Community Colleges is to prepare students for transfer. However, only 12 (13.0%) students in the cohort transferred. Upon entry, the goals of the majority were occupational (58.7%) rather than transfer (34.8%). Therefore, of the students whose stated goal was occupational, 14.8% also transferred. Having a goal of transfer enhanced a student's chances of transfer. Also, earning more credits increased a student's chances of transfer. Eight (17.0%) of the 47 students who earned 24 or more credits transferred.

The cohort was described and a comparison of demographics of age, sex, and ethnicity was made with the 530 students who also matriculated in 1984 and had no prior college experience. The 92 in the cohort were significantly younger ($\text{Chi-square}=25.4478$, $\text{Df}=4$, $\text{Probability}=.00$). When sub-samples of the cohort were compared, there was no significant difference in age, sex, or ethnicity between those students who earned 12-23 credits and those students who earned 24 or more credits. Forty subjects were eliminated from inclusion in the cohort because they had earned at least 12 credits at SMCC, but they had not earned at least 12 credits in 100- and 200-level classes. The credits were in developmental classes. A post-hoc hypothesis was made stating that there were no differences in age, sex, or ethnicity between the two groups. The hypothesis was accepted for sex and ethnicity, but it was rejected for age ($\text{Chi-square}=16.8818$, $\text{Df}=4$, $\text{Probability}=.00$). Students who earned fewer than 12 transferrable credits, but who earned more than 12 credits, were significantly older than students who

earned at least 12 transferrable credits. Since the number of transfers was too small to be compared with non-transfers, their characteristics could only be described. Individuals who transferred tended to be younger, male, single, Hispanic or Black, had transfer as a goal, entered with a high school degree, and earned a college cumulative GPA of at least 2.0. The information describing the cohort was extracted from existing data.

A telephone survey was conducted to gain information about the experiences of the cohort before and after they attended SMCC, their future educational plans, their perceptions of the academic and social environment of SMCC, and their estimate of the impact of SMCC on their goal achievement and personal growth. There was a relatively high response rate of 34.8% after six years indicating that the population had ties to the area. Before attending SMCC, 46.9% had primarily been working and 31.3% had primarily been attending high school. For the first six months after leaving SMCC, the majority (59.4%) continued in jobs which they already filled. Over three-quarters (78.1%) were working full time, in addition to other pursuits, when they were surveyed. Only 9.4% were attending school full time, but 28.1% were attending part time. Respondents were more apt to indicate that it was very likely (37.5%) or somewhat likely (15.6%) that they would attend a community college than it was very likely (21.9%) or somewhat likely (9.4%) that they would transfer to a four-year institution during the next five years. However, subjects indicated a likelihood of earning a four-year degree (very likely=25.0%; somewhat likely=15.6%) sometime during the next five years which exceeded their likelihood of transfer. These seemingly contradictory responses lend credence to the contention that students may have utilitarian short term goals for their

community college education, but they have aspirations of completing a degree at some time in the future (Cohen, 1988b).

No matter what goals they stated, students tended to be satisfied or dissatisfied in equal proportions with their goal achievement at SMCC. The greater number were achieving their goals, but respondents tended more often to answer that their goals were totally unachieved (21.9%) rather than somewhat unachieved (6.3%). A strong, significant positive relationship existed between the independent variable of goal strength and the dependent variable of goal achievement ($r=.484$, Probability $=.005$). Goal strength ($R^2=.236$) and G.P.A. ($R^2=.330$) were the best predictors of perceived goal achievement ($F=7.144$, Probability $=.003$). The majority of respondents perceived a great amount (31.3%) or some (31.3%) personal growth at SMCC. An even stronger correlation existed between the two dependent variables of goal achievement and perceptions of personal growth ($r=.535$, Probability $=.002$). Consequently, goal achievement ($R^2=.305$) was the best predictor of personal growth, followed by the formation of friendships at SMCC ($R^2=.378$, $F=8.506$, Probability $=.001$). Thus, goal achievement was an intervening variable in predicting personal growth.

Respondents rated the academic qualities of the courses ($M=4.19$) and instructors ($M=4.16$) most favorably, and they rated the academic quality of advisement ($M=3.47$) and the social quality of student activities ($M=3.78$) least favorably of the six factors of the SMCC environment. The academic quality of courses was significantly more highly rated than the social qualities of student services ($t=2.38$, Probability $=.024$) and student activities ($t=2.38$, Probability $=.020$) or the academic quality of advisement ($t=2.73$, Probability $=.008$). The academic quality of the instructors was rated significantly more highly than the social qualities of student activities ($t=2.15$, Probability $=.038$) and student activities

($t=2.20$, Probability=.032). Additionally, there was no correlation between any of the independent variables as assessed by the six environmental scales and the scales measuring the dependent variables of goal strength and personal growth. A correlation matrix revealed 11 positive relationships among the six environmental scales.

Recommendations were made that transfer rates be calculated on the basis of student goals and that student goals be clarified and used as a basis for student advisement. It was suggested that student progress be monitored to ensure that students are achieving their goals and that as student goals change new program advisement occurs. Special populations, including younger students who often earn lower G.P.A.'s, older students taking developmental courses, and Blacks with fewer than 24 credit hours, do not tend to transfer proportional to their numbers. Services to encourage these populations are recommended. A series of programs aimed at students reaching several plateaus, including those who have attended the college for two consecutive semesters, those who have completed 12 transferrable credit hours, and those who have completed 24 transferrable credit hours, can be formulated to point students toward transfer information and opportunities.

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CHAPTER I

Background and Rationale for the Study

Review of the Literature

Section 1. Goals of Community College Students.

There is a current movement in higher education to measure institutional effectiveness. "The primary goal is to achieve educational excellence through systematic assessments of student outcome" (Altieri, 1990, p. 15). Since a measure of institutional effectiveness is to meet student goals for attendance, one indicator might be the number of students who fulfill their educational intentions. Meeting goals of students is generally a part of the mission statement of a community college, so it is logical for an institution to assess how well it is doing in fulfilling its mission by determining how many students are prepared for entrance to the job market, for more complex roles in their present occupation, for fulfilling personal potential, and for transfer to a four-year institution.

Upon entry to community college, students might declare that their ultimate goal is to transfer to a four-year college, but that is often not their primary goal. About three-quarters of entering students say that their goal is to transfer, but only one-third to one-half say that it is their primary reasons at the time (Cohen, 1988a; Pincus and DeCamp, 1989). Their immediate primary goal is to receive job-related training either to enter the job market or to enhance their present job skills. Student goal statements may not be a reliable indicator of intent. In one study, half of the time the goal which students gave when registering at a community college was not the same as the goal they gave upon taking the matriculation assessment tests. Either students were stating a goal

merely because they were asked, or they had no clear goal (Nolan, 1989). Student goals have to be considered before community colleges can assess their effectiveness in such activities as conferring certificates or degrees, developing personal interests, and employment or transfer preparation. Fewer than one-half of new students enrolled for credit at Prince George's Community College in fall, 1987 intended to earn a two-year degree. Over a third intended to transfer without earning a degree. For all enrollees, 19% were preparing for transfer, 20% for job entry, 18% for job enhancement, and 30% were enrolled for personal enrichment. At this institution, there were more students enrolled for non-credit than for credit. Their figures explained the low graduation rate (Clagett, 1989). At each life stage, a student's educational goal may undergo change depending upon his or her needs and the influences of the environment. Eventually students would like to achieve a four-year degree, but for many students factors extrinsic to the institution may cause delays. As one subject commented during our study, "Life intervened."

Section 2. Attendance and Transfer Patterns of Community College Students.

Although some students may discontinue their education entirely and become drop-outs, most community college students tend to become stop-outs, leaving for reasons of employment, family responsibility, or military service. Their reasons to re-enter post-secondary institutions may be different from their reason for initial entry. The intention to re-enter higher education is influenced for men and women directly by the number of colleges attended and by college grades. However, for men, deriving less intrinsic satisfaction from their job while being employed in a higher status job is motivating. Conversely, for

women, deriving less extrinsic satisfaction from their job is motivating. For both sexes, perceptions that their previous college experience prepared them well for their career had a positive influence on their decision to re-enter (Smart and Pascarella, 1987). Therefore, it is important to determine not only whether or not students met their attendance goals, but also what their future plan might be. Although projections of future plans are not accurate, they do show an intent to act (Johnson, 1987). Future projections may indicate whether or not an individual has the motivation, resources, and past educational experiences to propel him/her toward higher levels.

The route which students take from the community college to the university also may be circuitous. Community college students are apt not to go in a straight line fashion from high school to the community college to the university. When attempts are made to track the community college attendance path, the researcher must account for students who transfer among and between institutions or attend institutions simultaneously, along with those students who stop-out for a period of time or who drop-out entirely. It takes longer for community college students to complete their program of study, because the majority attend school part time (Cohen, 1988a). The entire transfer process requires cooperation from the high schools, the community colleges, and the four-year institutions. For minority students, the community colleges are frequently their only access to post-secondary education. Hispanic students tend especially to be over-represented with 60% of all Hispanics in post-secondary institutions attending community colleges (Rendon and Nora, 1989). Hispanics are underrepresented at universities in comparison to community colleges while Blacks are over-represented since Blacks tend to go to historically Black colleges. Students with higher academic ability and higher SES tend to matriculate at

universities while the opposite characteristics describe community college students (Cohen, 1988b).

Minority and non-minority high school students will never enter post-secondary education if they are underequipped with academic, motivational, and fiscal resources. Collaborative attempts with high schools, such as the ACE program at South Mountain Community College, to solve these problems work in transitioning students into community college programs. When students arrive at the community college, there has to be a plan to advise and assess them and to determine their goals and special needs. Campus orientation or assignment of a mentor are also suggested for new students. While they are attending the institution, periodic checks of their progress, invitations to campus activities and attend campus events, reminders to avail themselves of student services such as counseling and tutoring, facilitate focusing students toward their goals which may include transfer. Assessments based upon student perceptions of institutional effectiveness, can be useful in providing services which will enhance the college mission. Information can be gathered from those who are currently enrolled, transfers to other community colleges and to four-year institutions, or alumni who are not enrolled in post-secondary institutions (Palmer, 1987). A model of the information which students needed for articulation and transfer between two- and four-year institutions was made on the basis of categories of information ranked by two-year staff, two-year students preparing to transfer, and students who had transferred into four-year institutions. Changes to courses, curricula, or prerequisites, and key transfer information were two immediate requirements. On an annual basis, the requirements were G.P.A. data and transfer data. G.P.A. grouped by academic major, grades in specific courses, graduation data, persistence data, field of study

change data, academic probation or suspension data, and average academic load data. Courses which are not accepted for transfer credit were requested for each academic term, and it was requested that subjects be defined occasionally (Riegle and Williams, 1990). Articulation worked best when there was communication between all institutions, there was an equivalency agreement at the course level, and when transfer was a priority of the institutions involved (Mertes, 1985).

The rate of transfer differs by the means used to calculate it. Generally, the rate of transfer is calculated by dividing the number of students defined as transferring by the potential number of transfer students. Depending upon how each of the two components in the ratio are defined, the results will differ. Especially problematical is defining the potential transfer pool which can consist of all students-continuing and new, full time and part time, credit and non-credit, or a particular sub-set of these. Most often institutions rely upon cross-sectional measures of transfer calculated during a semester or a year. The potential transfer pool is also affected by the high school graduation rate. So transfer rates are influenced by the number of students available to participate in the system. Other factors affecting the transfer rate are such things as the unemployment rate, the status of military needs, number of places available in the university freshmen class, and changes in admission policies at four-year institutions (McIntyre, 1987). Most often institutions rely upon cross-sectional measures of transfer calculated during a semester or a year. The three universities in Arizona calculate a rate each semester defining a transfer student as any individual with previously earned credits at another institution greater than 12, thus eliminating non-credit. They calculate the rate separately for new transfers and for continuing students, which includes duplicated numbers but is an effort at adding a time component. However, it is unclear when students

enter and leave the system only that they are present during a particular semester. By examining a particular cohort continuing at the university for a specified period of time, the tracking would be longitudinal and would be more accurate than the cross-sectional measure (Schmitz and del Mas, 1989).

The transfer assembly study sponsored by the Center for the Study of Community Colleges has undertaken longitudinal measures of transfer by identifying a cohort of first-time students at community colleges in a particular year who earned at least 12 transferrable credits and transferred to a senior institution during a four-year period. Since this cohort has no prior college experience and is persistent in remaining to earn at least 12 transferrable credits, the community college experience would seem to be salient in affecting transfer, if that were the goal of the student and no external factors intervened. The average transfer to new entrant ratio was for all 38 participating colleges was 12%, and the average transfer to new entrant with at least 12 credits was 22%. The more credits an individual earned, the more she/he was apt to transfer. The transfer rate for those with 12 to 23 credits was 14% and for those with 24 or more credits was 25%. Entrants with 12 to 23 entrants tended more often to be Black rather than Hispanic, White, and American-Indian with an overall transfer rate of two percent while entrants with 24 or more credits tended more often to be Hispanic with an overall transfer rate of 10%. Whites (11%) and Hispanics (10%) had the highest transfer rates of the four groups (Banks, 1990).

Only students know what their educational agenda is at the present time and what their motivations are to pursue future goals. Some students who leave the community college might be categorized as successful leavers rather than as drop-outs or stop-outs. Of students who left a New Jersey community college, 46% said they met their objectives and 32% with unmet objectives said

they planned to return (Cotnam and Ison, 1988). Students are also familiar with the pull of their other commitments and with the extent of their resources. When student leavers at 10 New York community colleges were surveyed, they indicated as their goal that they most often wanted job training (30%) closely followed by the desire to prepare for transfer (29%). Students rated the quality of instruction and the availability of courses as the most satisfactory college experiences. Those leaving because they were dissatisfied with their program or their progress, or for college-related reasons rated items significantly lower than did those leaving because they lacked funds, shouldered family responsibilities, or had personal reasons. Students did not blame the colleges for external factors over which the colleges had no control. However, there was no relationship found between the intention declared at entry and the reason for which students left. For example, students with either transfer or employability goals are just as likely to leave because they received a job offer (Winter and Fadale, 1986).

Section 3. Influences of Students Satisfaction on Persistence and Performance.

The extent of student satisfaction is another evaluative measure of institutional effectiveness. Programs and services can be reliably assessed by participants who have spent time at a college. Two studies relate student satisfaction with persistence at a college (Metzner and Bean, 1987; Johnson, 1987) while one study found no relationship; however, the same study found that having the goal of transfer was related positively to persistence (Voorhes, 1987). Directly related to the academic satisfaction of student transfers from community colleges to a university is the perception that education has practical value and that they were academically integrated into the college milieu (Johnson, 1987).

Practical value may be perceived as usefulness of education for getting a job or for personal growth (Bean and Bradley, 1986). A majority of students expressed satisfaction with each factor, but three reasons which students most often gave for withdrawing from college were: dissatisfaction with the academic program, unclear career objectives and unclear educational goals (Higgerson, 1985).

If students are satisfied with their college, they tend to earn higher grades. The satisfaction of female students is influenced by programs which create a sense of belonging. In turn, being academically successful also makes women feel more satisfied. The relationship is reciprocal. Programs which help women perform academically leads to satisfaction, just as they do for men. Both sexes benefit from positive contacts with faculty members and academic support programs. Satisfaction is less related to performance for men than for women. Having too much of a social life effects G.P.A. negatively, but participating in campus activities has a positive influence (Bean and Bradley, 1986). When the satisfaction of Canadian student who transferred to a university was assessed, 74% were content with the decision to have taken pre-transfer courses at a college rather than the entire course of study at a university. When respondents made separate ratings, they rated colleges higher than universities in five categories. Respondents' satisfaction with the category of the academic quality of the campus, headed by faculty and student interaction, received the greatest frequency of comments followed by the category of environment with most comments about transition from high school to a university. The category of personal growth came third in frequency of comments, first with friendships and second with personal growth (Vaala, 1989).

Students report that they perceive changes in their personal growth over the duration of their college education. Both men and women report fairly

consistent amounts of growth from year to year, but each year's experience makes "... significant and unique contributions to students' perceptions of their personal development during the college years" (Terenzini, Theophilides, and Lorang, 1984, p. 190). The only common influence over the three year reported student personal growth was contact with faculty. Impacting perceptions of personal growth during the freshman and sophomore year were measures of academic and social integration which were equally influential in the freshman year. During the sophomore year, the influence of academic integration was about one-third greater than it was for the freshman year, but personal growth in one year was not reliably related to personal growth during the next. Pre-college characteristics did not have a significant direct impact when entered into the model (Terenzini and Wright, 1987).

Section 4. Variables Affecting Persistence of Non-traditional Students.

The theoretical model which best describes the variables affecting retention and attrition rates for students at community colleges who tend to be non-traditional, that is they commute, attend part time, or are over age 24, was posited by Bean and Metzner in 1985 and confirmed by their research (1987). In their model based upon organizational theory, the fit of the person to the environment is important. Non-traditional students are influenced both by the time they spend outside the college in the external environment and in the academic environment of the college. Of less influence upon behavior of non-traditional students is the social environment of the college, because these individuals have presumably established a social network of friends and family. The 26 variables in the model they developed explained 29% of the variance in the dependent variable of drop-out and confirmed 11 of the 12 major paths. The

best predictors were G.P.A., intent to leave, and hours enrolled. The effects of environmental variables were mediated by intent to leave. Intent to leave was influenced by perceived utility of education and by institutional satisfaction which were categorized as psychological outcomes in the model. Older students and those with high goals were less likely to have intentions to leave. Older students and those who performed well in high school were apt to have a high G.P.A. Minority status reduced G.P.A. The number of credit hours for which students were enrolled negatively related to drop-out, suggesting that other factors compete for the time and energy of students causing them to devote fewer hours to educational priorities. The research by Webb (1989) using existing ASSET data eliminated psychological outcomes from the Bean and Metzner (1987) model and added expected student/college fit as a primary influence and academic self-confidence as a secondary influence on degree persistence of community college students.

Both male and female students who began their post-secondary education at a two-year college and were tracked for a period of nine years were most likely to persist if they were integrated into the academic and social network of an institution. Secondary school achievement also effected their persistence (Pascarella, Smart, and Ethington, 1986). Students can neither earn credits, certificates and degrees without remaining at an institution, nor can students become integrated into an institution without remaining there for a sufficient length of time. The effects of tenure at an institution are cyclical. However, the influence of academic and social integration has an unequal impact on retention rates for different categories of institutions and groups of students. In two-year commuter colleges goal commitment had a stronger direct effect on retention than did institutional commitment, but the reverse was true for four-year

institutions. For both types of commuter schools, academic integration had stronger indirect effect than social integration, confirming the Bean and Metzner model (Pascarella and Chapman, 1983).

Black students at a commuter university tended to drop-out at a rate 50% higher than the drop-out rate for Whites during the six-year interval of study. Neither was sex a factor influencing persistence nor was high school G.P.A. However, for the G.P.A. category of 3.25 or greater, the drop-out ratio rose with 1.88 Blacks dropping out for each White who left. Entrance exam scores had much the same effect. The difference in the ratio of Black and White drop-out increased as ACT scores increased. Since both Bean's and Tinto's models suppose that academic factors influence commuter students to persist in higher education, the finding that ACT scores and G.P.A. do not predict persistence of Black students suggest the need for further study (Lichtman, Bass and Ager, Jr., 1989). Being Black had a negative effect on the chance of a student completing freshman year and on earning a higher G.P.A. in two separate models made from existing data at the three California community colleges (Webb, II, 1988). In a comparative study of the achievement as measured by cumulative G.P.A. of Blacks and Whites, Blacks had significantly lower college and high school G.P.A., lower composite SAT scores, lower SES, and more interfering problems than Whites. Consequently, Blacks are less satisfied, less academically integrated, and more likely to feel that their university is discriminatory. In other words, they do not perceive that they fit as well into the environment as do Whites. In a reduced model derived from 17 significant predictors of cumulative G.P.A., four factors had main effects with race: SAT scores, student satisfaction, peer group relations, and interfering problems (Nettles, Thoeny, and Gosman, 1986). A specially designed program to increase the retention rate of Black students at the

university used trained faculty members in the pivotal role of helping students assess their academic progress, in serving as role models, and in encouraging students to use tutorial services and obtain study-skills training. Although the program probably did not affect the retention rate, it did positively impact G.P.A. (Giles-Gee, 1989).

The commitment of Hispanic community college students to their goals for attendance and to the institution were good predictors of retention. Those with high commitment also tended to earn more credit hours and credentials than those with less commitment. Even though students accumulated enough credit hours to graduate or earn a credential, yet over 70% did not. Students with good high school grades and those who prior to matriculating received encouragement from others had high commitment. Commitment accounted for 42% of the variance in academic integration. Students with high commitment perceived the institution more positively. Neither social nor academic integration had significant effect upon retention, although academic integration had the greater impact (Nora, 1987). One may conclude from this data that Hispanic students may not have clear goals, or may attend an institution without strong commitment or may attend without strong motivation toward achieving a specific goal. "The implication is that community colleges need to provide assistance and information for students to set firm, clear and realistic educational goals at an early enrollment point" (Rendon and Nora, 1989, p. 22). In a study of Hispanic and White students at six Texas border community colleges, a model was made using LISREL to explain predisposition to transfer. High institutional and goal commitments and high levels of academic and social integration were related to transfer behaviors and perceptions, but ethnicity was unrelated (Rendon and Others, 1988). The findings of this study expands the notion of the

person-environment fit posited by the retention models (Tinto, 1975; Tinto, 1988; Metzner and Bean, 1987) to apply also to transfer.

Description of South Mountain Community College

South Mountain Community College (SMCC) is situated on a scenic 104 acre vista in South Phoenix, Arizona. The college is just ten-years old. It was originally founded to serve a minority and economically disadvantaged population. The goal of the college, which is to provide access to higher education for students who have been educationally underserved, has been furthered by the development of student services, a learning resource center, student union, day care center, community outreach programs, and a variety of offerings in all academic areas leading to degrees. The college prides itself on the individualized services it now provides. In the area of student services, it is responsive to student needs in career development, cooperative education, counseling and advisement; financial aid with an emphasis on grants and work study; orientation, assessment and tutoring; legal and tax advise; housing, health, veterans and handicapped information; GED, credit by examination, and non-credit courses; clubs and organizations; and graduation and transfer assistance. Constant efforts are made to upgrade the quality of instruction through instructional councils and faculty committees as exemplified by developmental programs in basic skills and English as a Second Language and by enriched offerings in math, science, and engineering. The rate of tuition in fall, 1990 was \$23 per credit hour for county residents and approximately 14% of enrollees received a form of financial aid. South Mountain is one of ten colleges in the Maricopa Community College District. There is an open-door policy throughout the district, so there are no entrance requirements.

The college has steadily grown. In fall of 1990, enrollment reached 3288 which was an 11% increase over the enrollment of 2948 in fall of 1989 and an almost three-fold increase over the fall, 1984 enrollment of 1154. The proportion of ethnic groups as represented by the student body has changed since 1984. The enrollment of both American Indians and Asians increased 1.1% from fall, 1984 to fall, 1989. White enrollment increased 29.1% while Hispanic enrollment declined slightly (2.5%) and Black enrollment declined substantially (24.3%) during the same period. In fall, 1990, the ethnic composition of the student body was 3% American Indian, 1.4% Asian, 15% Black, 33% Hispanic, and 47% White. The growth of the White segment of the student body can be attributed to the innovation of college programs based at Ahwatukee and at Arizona State University (ASU) since fall of 1984, but the diminution of the Black segment is, as yet, unexplained although it is a national trend in the community colleges. For the past three years in the fall semester, 33% of the student body has been ages 15-19. In fall, 1984, only 15% of the student body was between 15-19. There has been a small decline of 20-24 years olds from 24.7% to 22.8% and a small decline of 30-39 years olds from 24% to 18.5%, but a marked decline of 10% of 25-29 year olds from 19.2% to 9.1%. Those over age 40 composed 14.7% of the student body in fall, 1984 and 15.3% in fall, 1990. The two age trends are an 18% increase in the population of students 15-19 from fall, 1984 to fall, 1990 and the diminution of the population 20-39. Obviously, a greater number of students are entering SMCC directly from high school.

Of those students who do transfer from SMCC to a four-year institution, the largest number transfer to ASU whose main campus is located only eight miles away. Students began transferring in fall, 1983 when there were 30 new students at ASU with credit from SMCC (Table 1).

Table 1. New students to ASU with transfer hours from SMCC fall 1983 to fall 1990.

Semester	Freshmen			Sophomores			Juniors			Senior			Total N	SMCC HC	
	M	F	T	M	F	T	M	F	T	M	F	T		Same Sem Prior Year	Transfer Rate*
F'83	3	3	6	4	5	9	7	8	15	0	0	0	30	1263	2.38%
S'84	0	1	1	1	0	1	4	2	6	0	0	0	8	1457	0.55%
F'84	1	1	2	4	7	11	6	2	8	0	0	0	21	1667	1.25%
S'85	0	0	0	2	2	4	3	4	7	0	0	0	11	2048	0.54%
F'85	1	2	3	2	3	5	3	5	8	0	0	0	16	1154	1.39%
S'86	0	1	1	2	0	2	1	0	1	0	0	0	4	1359	0.29%
F'86	0	1	1	6	2	8	1	5	6	0	0	0	15	1443	1.04%
S'87	0	0	0	0	0	0	2	2	4	0	0	0	4	1456	0.27%
F'87	1	0	1	3	1	4	2	2	4	0	0	0	9	2272	0.40%
S'88	0	0	0	1	3	4	0	1	1	0	0	0	5	2020	0.25%
F'88	0	1	1	2	3	5	4	4	8	0	0	0	14	2648	0.53%
S'89	0	0	0	0	3	3	0	2	2	0	0	0	5	2196	0.23%
F'89	0	5	5	1	8	9	5	14	19	0	0	0	33	2874	1.15%
S'90	1	0	1	4	1	5	4	5	9	0	1	1	16	2226	0.72%
F'90	1	3	4	13	6	19	14	7	21	0	0	0	44	2948	1.49%

*Transfer rate was calculated using the number in the total column as the numerator and using the total headcount (HC) for the corresponding semester during the previous year as the denominator.

Since that semester, the number of transfers declined until fall, 1989 when the number was 33. There were 44 transfers in fall, 1990. If this trend continues, then the number of transfers will increase once again. However, when using as a basis for comparison the transfer rate calculated with the total headcount of the previous year fall semester as the denominator and the total number of fall transfers as the numerator, the transfer rate actually diminished from 1.25% in fall, 1984 to 1.15% in fall, 1989. There were four transfers who were new students at the University of Arizona (U of A) in fall, 1990. There was one each classified as Hispanic, Black, Asian, and Caucasian.

Accreditation was granted to SMCC for the maximum ten-year period after visitation by the North Central Association of Colleges and Schools in 1989. Instructors and staff members make themselves available to students, even as activity sponsors, fundraisers, mentors, and boosters. Throughout the college,

there is a feeling of commitment and camaraderie. Community organization meet there, and there are satellite programs in the nearby communities of Ahwatukee and Guadalupe. An array of programs is designed for participants starting at elementary school age. Noteworthy are programs to bring high school students to campus to take classes and provide a transition to college life (ACE) and to interest minority high school students in engineering careers (MESA). For many, the college serves as a peaceful oasis from the turmoil of the surrounding community. The college sets the communal standard for longer-range life goals by emphasizing education and service.

Description of Maricopa Community College District

The college is one of ten in the Maricopa Community College District (MCCD). With an enrollment of approximately 95,000, the district is the second largest in the nation. There are three public universities located in the state of Arizona: Arizona State University, Northern Arizona State University, and the University of Arizona. The largest of these is Arizona State University (ASU) with its main campus eight miles from SMCC and a satellite campus offering upper division classes 15 miles from SMCC. The three universities are governed by an eleven-member board of regents, while a state board governs the nine community college districts in Arizona. The two governing boards are related through a joint conference committee which meets twice a year. The joint conference committee established in 1983 the Academic Program Articulation Steering Committee composed of officers from the three public universities and the three community college district to discuss articulation and transfer. The steering committee created twenty-six statewide articulation task forces composed of faculty from the two types of post-secondary institutions to meet at

least once a year. An agreement was signed by MCCD and ASU in 1983 to join in efforts to improve articulation and student transfer (de los Santos and Wright, 1989). The Western Interstate Commission on Higher Education has facilitated the preparation of "The Arizona Higher Education Course Equivalency Guide" to give information to students planning for transfer. A transfer advisor from ASU is permanently located at Mesa Community College, the MCCD college providing the most ASU transfers. According to MCCD research, which is facilitated by cooperation with ASU, these increases have occurred:

1. The number of undergraduates transferring to ASU who previously attended in MCCD has increased 7% between 1982 and fall, 1989 from 26% to 33%.
2. Forty-six percent of ASU upper division students previously attended in MCCD, an increase of 8% from 34% in 1982 to 46% in fall, 1989.
3. A third of ASU graduates previously attended MCCD including more than one half of MCCD transfers who graduated in liberal arts and business.
4. Since 1982, the percentage of MCCD students who have attended more than one MCCD college has doubled to 15.8% from 7.6%.
5. Also doubling, is a percentage of MCCD students who either attended another MCCD college or another post-secondary institution from 21.2% in 1982 to 44.1% in fall, 1989 (Wright, July 18, 1990).

Statistics are available for the numerous configurations of the transfer population including: traditional transfers, reverse transfers, concurrently enrolled and "swirling students" who move between the various institutions. All of these categories of transfer show a percentage increase in the time period between 1982 and fall, 1989 (Wright, July 18, 1990). The increasing mobility of students between and among post-secondary institutions only emphasizes the

argument for tracking and recordkeeping and for enhancing articulation agreements.

"The mission of the Maricopa Community Colleges is to meet the diverse educational needs of the people of the county by offering accessible and excellent adult education opportunities." Included also in the mission statement about MCCD as a system of comprehensive community colleges is a definition of each of these offerings: general education, the first two years of baccalaureate education, occupational education, basic skills education, adult continuing education, student support service programs, corporate service programs, and public service programs.

The Purpose of the Tracking Study

The purpose of this portion of the research funded by the Ford Foundation was to obtain information about students to describe and compare students who persist at a community college until they accrue a sufficient number of transferrable credits and to describe those students who do transfer. Specifically, the purpose was to identify a cohort of students who were college entrants to SMCC in fall, 1984 and who completed 12 or more semester hours at SMCC with at least 12 semester hours in transferrable courses at the 100- and 200-level. These students would have had no prior post-secondary experience, but they would have had adequate experience at SMCC to have been influenced in their decisions regarding higher education. Once these students were identified, they would be described and their progress tracked through their enrollment history at the college and in the MCCD and through telephone interviews. Also, other state colleges and the three universities would be asked to ascertain whether or not these students had transferred by fall, 1990. For purposes of institutional

program needs assessment, a post-hoc hypothesis was developed after inspection of the data to facilitate a description and a comparison of two groups of students who took 12 or more units, one group taking coursework which was transferrable and one group taking coursework which was developmental. Because the data were nominal level, chi-square at the .05 level of significance was used to test the assumptions of the null hypotheses.

Specifically, the purpose of tracking the student was to describe the age, ethnicity, sex, grade point average (G.P.A.), entry status, marital status, high school graduation status, goal upon entrance to SMCC, number of MCCC colleges attended, credits earned at SMCC, developmental credits earned at SMCC, and credits earned in 100- and 200-level classes at SMCC of:

1. new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 or more credits in 100- and 200-level classes at SMCC by fall, 1990.
2. new fall, 1984 entrants to SMCC with no prior college experience who earned between 12 to 23 credits at SMCC in 100- or 200-level classes by fall, 1990.
3. new fall, 1984 entrants to SMCC with no prior college experience who earned at least 24 credits at SMCC, with at least 12 credits in 100- or 200-level classes by fall, 1990.
4. new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 or more credit hours in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year institution in the state of Arizona.

The four group of students would be compared to ascertain whether or not they were the same population using the chi-square statistic with a significance level of .05. Null hypotheses would be postulated stating:

5. There is no difference in age, sex, and ethnicity between all new fall, 1984 entrants to SMCC with no prior college experience and those new fall, 1984 entrants who have completed 12 or more credits in 100- and 200-level courses by fall, 1990.

6. There is no difference in age, sex, and ethnicity between fall, 1984 entrants to SMCC with no prior college experience who completed 12 to 23 in 100- and 200-level courses by fall, 1990 and those who completed 24 or more credits with at least 12 credits in 100- and 200-level courses.

Additionally, a post-hoc hypothesis stated that:

7. There is no difference in age, sex, and ethnicity between new fall, 1984 entrants to SMCC with no prior college experience who completed twelve or more credits in 100- and 200-level courses by fall, 1990 and those new fall, 1984 entrants who completed twelve or more credits with fewer than 12 credits in 100- and 200-level courses.

The Purpose of the Telephone Survey

In addition to the tracking study, the college wished to obtain descriptive information about the experiences of new fall, 1984 entrants with no prior college experience who had earned 12 or more credits in 100- and 200-level courses by fall, 1990 prior to their coming to the college, while they were at the college, and after they left. The college wanted to measure satisfaction with services and programs, to determine the relationships among satisfaction with services and programs and to ascertain which variable were directly related to perceived goal achievement and to perceived personal growth.

Specifically, the purpose of the telephone study was to describe the primary occupation of students before they came to SMCC, and at the present

time. Students were asked to describe their goal in attending SMCC and to rate the strength of that goal and the extent to which they had achieved their goal on a five-point Likert-like scale. Using a similar scale, students were asked to rate the probability of their attending a community college, attending a four-year institution, and obtaining a four-year degree at any time during the next five years. They were then asked to evaluate their experience at SMCC by rating the quality of three social aspects of the college including friends, student services, and activities and by rating three academic aspects including advisement, courses, and instructors. Finally, they were asked to rate the extent of their personal growth during their attendance at SMCC.

These hypotheses were made to test the data:

8. There are no significant differences between the ratings which students give on six scales measuring the social and academic aspects of the college.
9. There are no relationships among any of the independent variables as represented by the six scales and the scales measuring goal strength, goal achievement, and intent to pursue further education during the next five years.
10. The independent variables are of no use in predicting the dependent variable goal achievement or the dependent variables achievement and personal growth or $H_0=B_1=B_2=B_3=0$.

Student's-t was used to test Hypothesis 9 at the .05 level of significance. Correlation matrices were formed and the Pearson product moment correlation was used to test Hypothesis 10 at the .05 level of significance. Multiple regression was used to ascertain the best predictors of the dependent variables goal achievement and personal growth with an F-test performed at the .05 level of significance to test Hypothesis 11.

Method

All new incoming students for fall, 1984 at SMCC were identified. There were 628. A computer program was generated showing whether or not these students had been enrolled in any of the other colleges of MCCC. Students who had been enrolled in any other MCCC institution before fall, 1984 were eliminated from the cohort. This left out 50 of the original 628. Then students who had taken more than 12 credit hours at SMCC were identified. A transcript was generated for each of the students. Upon inspection of the transcripts, 92 students were found to have taken at least 12 units in 100- and 200-level courses. An additional 40 students had taken at least 12 units, but enough of the units were in developmental classes so that the total fell below 12 transferrable units. A list of all students with 12 or more transferrable credits was sent to each of three Arizona public universities and three private four-year institutions. ASU identified 11 transfers and NAU identified one transfer. Addresses and telephone numbers were obtained from computer print-outs for the 92 students who fit the description of the sample. Thirteen students did not have listed telephone numbers and were mailed a personal letter (Appendix A). Students with listed telephone numbers were contacted and asked to respond to a survey instrument. Sixteen telephone numbers were no longer operational. An attempt to contact each individual was made three or more times. Then, a postcard was sent asking individuals with whom contact could not be made to please call and leave a message (Appendix B). Three subjects responded to the follow-up postcard. Thirty-two subjects agreed to participate. This represents a return rate of 34.7%.

The Survey Instrument

The survey instrument (Appendix C) contains two sections. Data for the first section could be obtained from existing sources including transcripts and computer print-outs. This data included age, sex, ethnicity, G.P.A., number of MCCD colleges attended, status at entry, total credits earned, credits earned in 100- and 200-level courses, credits earned in developmental courses, and transfer status. Data was collected for the 92 students identified as the cohort. The second section of the survey collected additional data by telephone. The instrument was used in a pilot-test with five adults. After changes were made, the instrument was again administered to an additional 10 adults to insure its face or content validity. Respondents were asked what they had primarily been doing before attending and after they left SMCC; their major goal for attending and the ratings on a five-point Likert-like scale of the perceived strength of the goal and the extent to which they completed their goal; the types of schools they had since attended, the likelihood of their future attendance at the community or four-year college and the likelihood of earning a four-year degree at sometime during the next five years. Subjects were asked about their satisfaction with the social and academic factors of SMCC. Since the research in the area of retention focuses on a variety of models which show that social and academic integration into a campus is positively related to retention and satisfaction (see Background and Rationale for the Study), three questions about each of these two types of integration were asked. Respondents were asked to rate the academic factors of courses, instructors, and advisement and to rate the social factors of activities, friendships, and student services on a five-point Likert-like scale. Finally, the respondents were asked to judge on a one-to-five scale the amount of personal growth she/he had achieved at SMCC.

Limitations

Performing a data collection five years after the cohort enters an institution is problematical. With the mobility in the Phoenix metropolitan area, it was anticipated that students would have changed their telephone number and address. The issue of mobility again impacted the study when the cohort was defined. The definition of the cohort was students who had never before attended another institution and who earned 12 or more credit hours in 100- and 200-level classes at the SMCC campus. Given the high rate of transfer among MCCD colleges, these criteria limited the number in the cohort. The services of the college have been greatly expanded since fall, 1984. The ratings of the services of five years ago probably do not provide an adequate basis for recommending changes to existing services. These perceptions provide baseline data to evaluate progress in service provision.

While the sample for the telephone survey of 32 is just large enough to justify using parametric statistics, cell sizes are small in cross-tabulations, correlation matrices, and multiple regression models. Also, the number of transfers is so small that no statistical procedures can be carried out. The demographic characteristics of the 12 transfers can only be described.

The instrument used for the data collection was tested for validity but not for reliability. The correlation among the six items on the two scales measuring social and academic integration is high which is fortuitous. However, no reliability coefficient has been calculated for the instrument. Single scales measure such items as perceived goal strength, goal achievement, and personal growth. These single measurements may be unreliable especially five years after the experience, and the subjects' perceptions may be artifacts of their more recent

experiences. Nonetheless, their perceptions predict their future educational plans as was demonstrated when subjects were asked to rate the strength of their plans to attend a four-year institution or to earn a four-year degree.

CHAPTER II

Results

Results of the Tracking Study

Description of the new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990.

There were 92 students who were identified as the cohort. The largest number of students were in the traditional age category for college entrants when they matriculated at the college with 39.1% below age 20 (Table 2).

Table 2. Description of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990.

N=92						
Age	0-19 36 (39.1%)	20-25 16 (17.4%)	26-35 19 (20.7%)	36-45 15 (16.3%)	46+ 5 (5.4%)	NA 1 (1.1%)
Ethnicity	Asian 2 (2.2%)	Black 36 (39.1%)	Hispanic 33 (35.9%)	White 17 (18.5%)	Other 2 (2.2%)	NA 2 (2.2%)
Sex	Male 41 (44.6%)	Female 51 (55.4%)				
G.P.A.	0-1.9 20 (21.7%)	2.0-2.4 23 (25.0%)	2.5-2.9 20 (21.7%)	3.0-3.4 22 (23.9%)	3.5+ 7 (7.6%)	
Entry Status	Transfer 44 (47.8%)	H.S. Grad 30 (32.6%)	G.E.D. 7 (7.6%)	Concurrent 1 (1.1%)	Maturity 7 (7.6%)	NA 3 (3.3%)
Marital Status	Single 63 (68.5%)	Married 29 (31.5%)				
High School Graduation Status	Graduate 68 (73.9%)	Non-Graduate 24 (26.1%)				
Goal Upon Entrance to SMCC	Occupational 54 (58.7%)	Transfer 32 (34.8%)	NA 6 (6.5%)			
MCCD Colleges Attended	SMCC Only 56 (60.9%)	2 3 27 (29.3%)	4+ 5 (5.4%)	4 (4.3%)		
Credits Earned at SMCC	12-17 26 (28.3%)	18-23 19 (20.7%)	24-34 11 (12.0%)	35+ 36 (39.1%)		
Developmental Credits at SMCC	0 49 (53.3%)	1-3 4-6 11 (12.0%)	7-9 12 (13.0%)	10+ 6 (6.5%)	14 (15.2%)	
Credits in 100/200 Level	12-23 50 (54.3%)	24+ 42 (45.7%)				

Cross-tabulations of entry status with age show that 60% of those entering as high school graduates were below age 20 (Table 3).

Table 3. Age of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by status at entry to SMCC.

			0-19	20-25	26-35	36-45	46 or over	No Answer
Total Respondents = 92			36	16	18	16	5	1
	R	100%	39%	17%	20%	17%	5%	1%
	C	100%	100%	100%	100%	100%	100%	100%
Status at Entry to SMCC								
College Transfer 44			16	12	10	5		1
	R	100%	36%	27%	23%	11%		2%
	C	48%	44%	75%	56%	31%		100%
High School Grad 30			18	3	4	3	2	
	R	100%	60%	10%	13%	10%	7%	
	C	33%	50%	19%	22%	19%	40%	
GED 7			1		2	3	1	
	R	100%	14%		29%	43%	14%	
	C	8%	3%		11%	19%	20%	
Concurrent Enrollee 1						1		
	R	100%				100%		
	C	1%				6%		
Maturity 7				1	2	3	1	
	R	100%		14%	29%	43%	14%	
	C	8%		6%	11%	19%	20%	
No Answer 3			1			1	1	
	R	100%	33%			33%	33%	
	C	3%	3%			6%	20%	

The next largest number were ages 26-35 (20.7%) and the third largest were ages 20-25 (17.4%) (Table 2). For those entrants under GED or mature status (no degree or GED), all but one in each category were over age 25 (Table 3) and most

were female; whereas those entering as high school graduates or college transfer were almost equally divided between male and female (Table 4).

Table 4. Sex of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by status at entry to SMCC.

			Male	Female
Total Respondents =	92		41	51
R	100%		45%	55%
C	100%		100%	100%
Status at Entry to SMCC				
College Transfer	44		22	22
R	100%		50%	50%
C	48%		54%	43%
High School Grad	30		14	16
R	100%		47%	53%
C	33%		34%	31%
GED	7		1	6
R	100%		14%	86%
C	8%		2%	12%
Concurrent Enrollee	1		1	
R	100%		100%	
C	1%		2%	
Maturity	7		2	5
R	100%		29%	71%
C	8%		5%	10%
No Answer	3		1	2
R	100%		33%	67%
C	3%		2%	4%

Most of the 92 (55.4%) were female (Table 2). Most mature entrants were Black (57%), and most GED entrants (57%) were Hispanic (Table 5).

Table 5. Ethnicity of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by status at entry to SMCC.

		Asian	Black	Hispanic	White	Other	No Answer
Total Respondents =	92	2	36	33	17	2	2
	R 100%	2%	39%	36%	18%	2%	2%
	C 100%	100%	100%	100%	100%	100%	100%
Status at Entry to SMCC							
College Transfer	44		19	15	7	2	1
	R 100%		43%	34%	16%	5%	2%
	C 48%		53%	45%	41%	7	50%
High School Grad	30	2	10	12	6		
	R 100%	7%	33%	40%	20%		
	C 33%	100%	28%	36%	35%		
GED	7		1	4	1		1
	R 100%		14%	57%	14%		14%
	C 8%		3%	12%	6%		50%
Concurrent Enrollee	1		1				
	R 100%		100%				
	C 1%		3%				
Maturity	7		4	1	2		
	R 100%		57%	14%	29%		
	C 8%		11%	3%	12%		
No Answer	3		1	1	1		
	R 100%		33%	33%	33%		
	C 3%		3%	3%	6%		

In order of ethnic representation, there were 39.1% Black, 35.9% Hispanic, 18.5% White, and 2.2% Asian (Table 2). When G.P.A. was cross-tabulated with ethnicity, Hispanics earned 57% of averages 3.5 or above while representing 36% of the respondents, and Whites earned 41% of averages from 3.0-3.4 while representing 18% of the sample. Blacks tended to be slightly over-represented in proportion to their number (39%) with G.P.As. from 0-2.9 (Table 6).

Table 6. Ethnicity of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by cumulative grade point average of respondent.

			Asian	Black	Hispanic	White	Other	No Answer
Total Respondents = 92			2	36	33	17	2	2
	R	100%	2%	39%	36%	18%	2%	2%
	C	100%	100%	100%	100%	100%	100%	100%
Cumulative Grade Point Average of Respondents								
0-1.9				10	8	1	1	
	R	100%		50%	40%	5%	5%	
	C	22%		28%	24%	6%	50%	
2.0-2.4			1	11	6	3	1	1
	R	100%	4%	48%	26%	13%	4%	4%
	C	25%	50%	31%	18%	18%	50%	50%
2.5-2.9			1	9	8	2		
	R	100%	5%	45%	40%	10%		
	C	22%	50%	25%	24%	12%		
3.0-3.4				5	7	9		1
	R	100%		23%	32%	41%		5%
	C	24%		14%	21%	53%		50%
3.5 or Above				1	4	2		
	R	100%		14%	57%	29%		
	C	8%		3%	12%	12%		

However, when the categories for G.P.A. were collapsed and a second cross-tabulation was made with ethnicity, Blacks represented 47% of those achieving a G.P.A. from 0-1.9 while representing 39% of the sample. Earned G.P.A. by Hispanics (36%) and also by Asians (2%) for the two categories of G.P.A. was exactly proportional to their numbers. However, Whites earned 29% of averages 2.5 or above but only 9% of the averages below 2.5 (Table 7).

Table 7. Ethnicity of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by cumulative grade point average of respondent.

		Asian	Black	Hispanic	White	Other	No Answer
Total Respondents = 92		2	36	33	17	2	2
	R 100%	2%	39%	36%	18%	2%	2%
	C 100%	100%	100%	100%	100%	100%	100%
Cumulative Grade Point Average of Respondents							
0-2.4		1	22	17	4	2	1
	R 100%	2%	47%	36%	9%	4%	2%
	C 51%	50%	61%	52%	24%	100%	50%
2.5 or Above		1	14	16	13		1
	R 100%	2%	31%	36%	29%		2%
	C 49%	50%	39%	48%	76%		50%

Females were over-represented in proportion to their number (55%) at each end of the scale for G.P.A., while males were proportionately represented in the middle range (Table 8).

Table 8. Sex of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by cumulative grade point average of respondent.

			Male	Female
Total Respondents = 92			41	51
	R	100%	45%	55%
	C	100%	100%	100%
Cumulative Grade Point Average of Respondent				
0-1.9				
		20	8	12
	R	100%	40%	60%
	C	22%	20%	24%
2.0-2.4				
		23	11	12
	R	100%	48%	52%
	C	25%	27%	24%
2.5-2.9				
		20	10	10
	R	100%	50%	50%
	C	22%	24%	20%
3.0-3.4				
		22	10	12
	R	100%	45%	55%
	C	24%	24%	24%
3.5 or Above				
		7	2	5
	R	100%	29%	71%
	C	8%	5%	10%

Students below age 20 represented 60% of those achieving a G.P.A. between 0-1.9, while students age 36-45 represented 57% of those receiving a G.P.A. of 3.5 or above (Table 9).

Table 9. Age of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 by cumulative grade point average of respondent.

			0-19	20-25	26-35	36-45	46 or over	No Answer
Total Respondents = 92			36	16	18	16	5	1
	R	100%	39%	17%	20%	17%	5%	1%
	C	100%	100%	100%	100%	100%	100%	100%
Cumulative Grade Point Average of Respondent								
0-1.9			12	2	4	2		
	R	100%	60%	10%	20%	10%		
	C	22%	33%	13%	22%	12%		
2.0-2.4			12	4	4	2	1	
	R	100%	52%	17%	17%	9%	4%	
	C	25%	33%	25%	22%	12%	20%	
2.5-2.9			5	3	5	3	4	
	R	100%	25%	15%	25%	15%	20%	
	C	24%	14%	19%	28%	19%	8%	
3.0-3.4			6	6	4	5		1
	R	100%	27%	27%	18%	23%		5%
	C	24%	17%	38%	22%	31%		100%
3.5 or Above			1	1	1	4		
	R	100%	14%	14%	14%	57%		
	C	8%	3%	6%	6%	25%		

New fall, 1984 entrants to SMCC with no prior college experience who earned between 12 to 25 credits at SMCC in 100- or 200-level classes by fall, 1990 (Table 10).

Table 10. Description of new fall, 1984 entrants to SMCC with no prior college experience who earned between 12-23 credits in 100- and 200-level classes at SMCC by fall, 1990.

N=45						
Age	0-19 14 (31.1%)	20-25 9 (20.0%)	26-35 11 (24.4%)	36-45 9 (20.0%)	46+ 1 (2.2%)	NA 1 (2.2%)
Ethnicity	Asian 2 (4.4%)	Black 15 (33.3%)	Hispanic 18 (40.0%)	White 7 (15.6%)	Other 2 (4.4%)	NA 1 (2.2%)
Sex	Male 19 (42.2%)	Female 26 (57.8%)				
G.P.A.	0-1.9 13 (28.9%)	2.0-2.4 9 (20.0%)	2.5-2.9 9 (20.0%)	3.0-3.4 11 (24.4%)	3.5+ 3 (6.7%)	
Entry Status	Transfer 24 (53.3%)	H.S. Grad 15 (33.3%)	G.E.D. 3 (6.7%)	Concurrent 1 (2.2%)	Maturity 2 (4.4%)	
MCCD Colleges Attended		SMCC Only 25 (55.6%)	2 15 (33.3%)	3 3 (6.7%)	4+ 2 (4.4%)	
Developmental Credits at SMCC	0 31 (68.9%)	1-3 5 (11.1%)	4-6 6 (13.3%)	7-9 1 (2.2%)	10+ 2 (4.4%)	

Of the 92 students who comprised the cohort, 45 composed this sub-sample. The largest age group was the youngest with 31.1% below age 20. Next in size was 26 to 35 year olds. There were the same number of 20 to 25 year olds as there were 36 to 45 year olds (20.0%). Only one individual was over 45. The most represented ethnic group was Hispanic (40.0%) and the next largest was Black (33.3%). Twenty-six of the 45 were female. The largest number had a G.P.A. between 0 and 1.9 (28.9%) with the next largest number having a G.P.A.

between 3.0 and 3.4 (24.4%). There were nine individuals or 20.0% in each of two categories of G.P.A. between 2.0-2.4 and between 2.5-2.9. Therefore, when categories were collapsed, the largest number had a G.P.A. between 2.0 and 2.9. The entry status of the group was primarily that of transfer (55.6%). The majority of students had attended only SMCC (55.6%). Also, the majority had taken no developmental credits at SMCC (53.3%).

New fall, 1984 entrants to SMCC with no prior college experience who earned at least twenty-four credits at SMCC, with at least 12 credits in 100- or 200-level classes by fall, 1990 (Table 11).

Table 11. Description of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 24 credits at SMCC, with at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990.

N=47

Age	0-19 22 (46.8%)	20-25 7 (14.9%)	26-35 8 (17.0%)	36-45 6 (12.8%)	46+ 4 (8.5%)	NA
Ethnicity	Black 21 (44.7%)	Hispanic 15 (31.9%)	White 10 (21.3%)	NA 1 (2.1%)		
Sex	Male 22 (46.8%)	Female 25 (53.2%)				
G.P.A.	0-1.9 7 (14.9%)	2.0-2.4 14 (29.8%)	2.5-2.9 11 (23.4%)	3.0-3.4 11 (23.4%)	3.5+ 4 (8.5%)	
Entry Status	Transfer 18 (38.3%)	H.S. Grad 18 (38.3%)	G.E.D. 4 (8.5%)	Maturity 4 (8.5%)	NA 3 (6.4%)	
MCCD Colleges Attended		SMCC Only 31 (66.0%)	2 12 (25.2%)	3 2 (4.3%)	4+ 2 (4.3%)	
Developmental Credits at SMCC	0 18 (38.3%)	1-3 6 (12.8%)	4-6 6 (12.8%)	7-9 5 (10.6%)	10+ 12 (25.5%)	
Credits in 100, 200 Level		12-23 5 (10.6%)	24+ 42 (89.4%)			

The 47 individuals in this sub-sample tended to be young. Most were ages zero to 19 (46.8%) when they entered the college. Four students (8.5%) were age 46 or older. The most represented ethnic group was Black with 44.7%, and the next most represented was Hispanic with 31.9%. There were 22 males (46.8%) and 25 females (5.2%). There were 14 students (29.8%) who earned a G.P.A. of 2.0-2.4. Eleven students (23.4%) earned 2.5-2.9 and 11 others earned 3.0-3.4. If categories are collapsed, most individuals earned a G.P.A. of 2.0-2.9 (53.2%). Matriculants to the college tended to be divided into two entry status categories those of transfer and of high school graduate with 38.3% in each. Two-thirds (66.0%) of the sub-sample had only attended SMCC. The largest number of students (38.3%) had taken no developmental credits, but the next largest number (25.5%) had taken 10 or more developmental credits. Yet, an overwhelming majority (89.4%) had twenty-four or more credits in 100- and 200-level courses.

New fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 or more credit hours in 100 and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year institution in the state of Arizona by fall, 1990.

There were 12 (14.1%) respondents in this sub-sample of the 92 in the cohort. Four individuals (33.3%) were ages 0 to 19; five (41.7%) were ages 20 to 25, and three were ages 26 to 35 (Table 12).

Table 12. Description of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990.

N=12

Age	0-19 4 (33.3%)	20-25 5 (41.7%)	26-35 3 (225.0%)		
Ethnicity	Black 5 (41.7%)	Hispanic 5 (41.7%)	White 2 (16.7%)		
Sex	Male 8 (66.7%)	Female 4 (33.3%)			
G.P.A.	0-1.9 1 (8.3%)	2.0-2.4 2 (16.7%)	2.5-2.9 3 (25.0%)	3.0-3.4 4 (33.3%)	3.5+ 2 (16.7%)
Entry Status		Transfer 6 (50.0%)	H.S. Grad 6 (50.0%)		
Marital Status		Single 9 (75.0%)	Married 3 (25.0%)		
High School Graduation Status		Graduate 11 (91.7%)	Non-Graduate 1 (8.3%)		
Goal Upon Entrance to SMCC		Occupational 3 (25.0%)	Transfer 8 (66.7%)	NA 1 (8.3%)	
MCCD Colleges Attended		SMCC Only 4 (33.3%)	2 6 (50.0%)	3 1 (8.3%)	4+ 1 (8.3%)
Credits Earned at SMCC		12-17 4 (33.3%)	24+ 8 (66.7%)		
Developmental Credits at SMCC		0 6 (50.0%)	1-3 3 (25.0%)	7-9 2 (16.7%)	10+ 1 (8.3%)
Credits in 100/200 Level		12-23 4 (33.3%)	24+ 8 (66.7%)		

There were five transfers who were Black (41.7%), five who were Hispanic, and two who were White (16.7%). Two-thirds were male. The sub-sample had a relatively high G.P.A. with all 11 individuals (91.7%) having a G.P.A. of 2.0 or above. No students who transferred were categorized upon entrance to SMCC as having a G.E.D, being concurrently enrolled at another institution, or as maturity (which indicates the lack of a high school diploma or its equivalent). At entry, half of the transfer students were listed as transferring from other colleges and half were classified as high school graduates (Table 12). Matriculants entering as high school graduates tended to be younger than those entering as a college transfer (Table 13).

Table 13. Age of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by status at entry to SMCC.

		0-19	20-25	26-35
Total Respondents = 12		4	5	3
R	100%	33%	42%	25%
C	100%	100%	100%	100%
Status at Entry to SMCC				
College Transfer 6		1	3	2
R	100%	17%	50%	33%
C	50%	25%	60%	67%
High School Grad 6		3	2	1
R	100%	50%	33%	17%
C	50%	75%	40%	33%

Five of six matriculants with high school graduate status were male (Table 14).

Table 14. Sex of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by status at entry to SMCC.

			Male	Female
Total Respondents = 12			8	4
	R	100%	67%	33%
	C	100%	100%	100%
Status at Entry to SMCC				
College Transfer 6			3	3
	R	100%	50%	50%
	C	50%	38%	75%
High School Grad 6			5	1
	R	100%	83%	17%
	C	50%	63%	25%

Most transfers were single (75.0%) rather than married when they entered SMCC (Table 12), and no males were married (Table 15).

Table 15. Sex of first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by marital status.

			Male	Female
Sex			8	4
	R	100%	67%	33%
	C	100%	100%	100%
Marital Status				
Married 3			0	3
	R		0%	100%
	C		0%	75%
Unmarried 9			8	1
	R		89%	11%
	C		100%	25%

Two-thirds had attended more than one MCCC college (Table 12). Eighty percent of students ages 20 to 25 had attended more than one college (Table 16).

Table 16. Number of community colleges attended by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by age of respondents.

			SMCC Only	SMCC + Other CC's
Total Respondents	12		4	8
	R 100%		33%	67%
	C 100%		100%	100%
0-19	4		2	2
	R 100%		50%	50%
	C 33%		50%	50%
20-25	5		1	4
	R 100%		20%	80%
	C 42%		25%	50%
26-35	3		1	2
	R 100%		33%	67%
	C 25%		25%	25%

Three quarters of the females had attended two or more colleges (Table 17).

Table 17. Number of community colleges attended by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by sex of respondent.

			SMCC Only	SMCC + Other CC's
Total Respondents	12		4	8
	R	100%	33%	67%
	C	100%	100%	100%
Male	8		3	5
	R	100%	38%	63%
	C	67%	75%	63%
Female	4		1	3
	R	100%	25%	75%
	C	33%	25%	38%

Half of the 12 transfer students earned no developmental credits. Of the five Blacks, four (80.0%) earned no developmental credit, but of five Hispanics one (20.0%) earned no credits and two earned seven or more developmental credits (Table 18).

Table 18. Number of credits earned in developmental by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by ethnicity of respondent.

			0	1-3	4-6	7-9	10 or Above
Total Respondents	12		6	3		2	1
	R	100%	50%	25%		17%	8%
	C	100%	100%	100%		100%	100%
Black	5		4			1	
	R	100%	80%			20%	
	C	42%	67%			50%	
Hispanic	5		1	2		1	1
	R	100%	20%	40%		20%	20%
	C	42%	17%	67%		50%	100%
White	2		1	1			
	R	100%	50%	50%			
	C	17%	17%	33%			

Females were proportionally more likely to take fewer developmental courses than males. Two-thirds had earned 24 or more credits in 100- and 200-level courses (Table 19).

Table 19. Number of credits earned in developmental by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by sex of respondent.

			0	1-3	4-6	7-9	10 or Above
Total Respondents	12		6	3		2	1
	R	100%	50%	25%		17%	8%
	C	100%	100%	100%		100%	100%
Male	8		3	2		2	1
	R	100%	38%	25%		25%	13%
	C	67%	50%	67%		100%	100%
Female	4		3	1			
	R	100%	75%	25%			
	C	33%	50%	33%			

All of the transfers were ages 0 to 19 upon entrance to SMCC and earned 24 or more credits (Table 20).

Table 20. Number of credits earned by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by age of respondent.

			12-23	24 or Above
Total Respondents	12		4	8
	R	100%	33%	67%
	C	100%	100%	100%
0-19	4			4
	R	100%		100%
	C	33%		50%
20-25	5		2	3
	R	100%	40%	60%
	C	42%	50%	38%
26-35	3		2	1
	R	100%	67%	33%
	C	25%	50%	13%

Four of the five Hispanics and both of the Whites earned 24 or more credits (Table 21).

Table 21. Number of credits earned in developmental classes by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by ethnicity of respondent.

			12-23	24 or Above
Total Respondents	12		4	8
	R	100%	33%	67%
	C	100%	100%	100%
Black	5		3	2
	R	100%	60%	40%
	C	42%	75%	25%
Hispanic	5		1	4
	R	100%	20%	80%
	C	42%	25%	50%
White	2			2
	R	100%		100%
	C	17%		25%

While three of the four females earned 12 to 23 credits in 100- and 200-level courses, six (88.0%) of the seven males earned 24 or more credits in 100- and 200-level courses (Table 22).

Table 22. Number of credits earned in developmental classes by first-time fall, 1984 SMCC students with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 and who transferred to a four-year Arizona university by fall, 1990 by sex of respondent.

			12-23	24 or Above
Total Respondents	12		4	8
	R 100%		33%	67%
	C 100%		100%	100%
Male	8		1	7
	R 100%		13%	88%
	C 67%		25%	88%
Female	4		3	1
	R 100%		75%	25%
	C 33%		75%	13%

There is no difference in age, sex, and ethnicity between all new fall, 1984 entrants to SMCC with no prior college experience and those new fall, 1984 entrants who have completed 12 credits in 100- and 200-level courses by fall, 1990.

Separate chi-squares for age, sex, and ethnicity were calculated using a statistical program package called AbSurv. The chi-square for age was 25.4478 with Df=4 and a probability=.00. The 92 students with at least 12 credits hours in 100- and 200-level classes were significantly different in age from the 530 new fall, 1984 students with no prior college experience. The 92 students were significantly younger than the 530. Therefore, the null hypothesis is rejected. However, the null hypothesis was accepted for both ethnicity (Chi Square=.736442, Df=4, Probability=.95) and for sex (Chi Square=.463785, Df=1, Probability=.50). A comparison between the two populations is graphically shown in Figures 1 (Age), Figure 2 (Sex), and Figure 3 (Ethnicity). (See Appendix D for Figures).

There is no difference in age, sex, and ethnicity between fall, 1984 entrants to SMCC with no prior experience who completed 12 to 23 credits in 100- and 200-level courses by fall, 1990 and those who completed 24 or more credits with at least 12 credits in 100- and 200-level courses by fall 1984 and those who completed 12 or more credits with fewer than 12 credits in 100- and 200-level courses.

The null hypothesis for differences in age, sex, and ethnicity were all accepted. There were no differences between those students in the cohort who earned 12 to 23 credits and those who earned 24 or more credits. Chi-square for age was 2.40897, Df=4, Probability=.66; for sex Chi-square=.0284230, DF=1, Probability=.87; and for ethnicity Chi-square=2.83501, DF=4, Probability=.58. A comparison between the two sub-samples is graphically shown in Figures 4 (Age), Figure 5 (Sex), and Figure 6 (Ethnicity). (See Appendix D for Figures).

There is no difference in age, sex, and ethnicity between new fall, 1984 entrants to SMCC with no prior college experience who completed 12 or more credits in 100- and 200-level courses.

There were 40 subjects eliminated from the cohort since they had accumulated 12 or more credit hours but had not accumulated 12 or more credit hours in 100- and 200-level classes. When the actual frequency for age, sex, and ethnicity of these individuals was compared with the expected frequency for these characteristics if they had been part of the cohort of 92, the results were significant for age (Chi-square=16.8818, Df=4, Probability=.00). Those individuals taking sufficient credits in developmental courses, the total credits in 100- and 200-level courses fell below 12 were significantly older than those individuals in the cohort. There were no significant differences in ethnicity or in sex between the two groups (Chi-square for ethnicity=6.41866, Df=4, Probability=.17; Chi-square for sex=0.0116964, Df=1, Probability=.91). Figures 7 (Age), Figure 8 (Sex),

and Figure 9 (Ethnicity) depict the demographic characteristics of the two subsample. (See Appendix D for Figures).

Results of the Telephone Survey

Of the 92 subjects in the cohort, 32 individuals could be contacted for the telephone survey. The activities in which the respondents were primarily engaged before attending SMCC were working (46.9%) and attending high school (31.3%) in Table 23).

Table 23. Responses of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 to the telephone survey.

Primary Occupation Before Attending SMCC					N=32
Attending HS	Seeking work	Working	Staying Home		
10 (31.3%)	1 (3.1%)	15 (46.9%)	5 (15.6%)		
Main Goal for Attending SMCC					N=32
Transfer	Labor Force Entry	Improve Job Skills	Personal Interest		
10 (31.3%)	5 (15.6%)	13 (40.6%)	4 (12.5%)		
Strength of Main Goal for Attending SMCC					Mean=3.69 SD=1.12 N=32
Very Weak	Somewhat Weak	Neutral	Somewhat Strong	Very Strong	
2 (6.3%)	2 (6.3%)	8 (25.0%)	12 (37.5%)	8 (25.0%)	
Achievement of Main Goal					Mean=3.31 SD=1.49 N=32
Totally Unachieved	Somewhat Unachieved	Neutral	Somewhat Achieved	Totally Achieved	
7 (21.9%)	2 (6.3%)	5 (15.6%)	10 (31.3%)	9 (25.0%)	
Schools Attended After SMCC (All that Apply)					N=36
None	Two-Year School	Four-Year School	Other		
20 (62.5%)	8 (25.0%)	7 (21.9%)	1 (3.1%)		
Primary Occupation First Six Months After SMCC					N=32
Seeking Work	Continuing in Job	Attending School	Staying Home		NA
6 (18.8%)	19 (59.4%)	3 (9.4%)	3 (9.4%)		1 (3.1%)
Present Occupation (All that Apply)					N=46
Attending School FT	Attending School PT	Seeking Work	Staying Home	Working FT	Working PT
3 (9.4%)	9 (28.1%)	3 (9.4%)	3 (9.4%)	25 (78.1%)	3 (9.4%)
Likelihood of Community College Attendance in Next Five Years					Mean=3.72 SD=1.25 N=32
Very Unlikely	Somewhat Unlikely	Neutral	Somewhat Likely	Very Likely	
3 (9.4%)	0 (0.0%)	12 (37.5%)	5 (15.6%)	12 (37.5%)	
Likelihood of Transferring to a Four-Year Institution in Next Five Yrs.					Mean=2.81 SD=1.53 N=32
Very Unlikely	Somewhat Unlikely	Neutral	Somewhat Likely	Very Likely	
10 (31.3%)	3 (9.4%)	9 (28.1%)	2 (9.4%)	7 (21.9%)	
Likelihood of Completing a Four-Year Degree in Next Five Yrs.					Mean=2.97 SD=1.58 N=32
Very Unlikely	Somewhat Unlikely	Neutral	Somewhat Likely	Very Likely	
9 (28.1%)	4 (12.5%)	6 (18.8%)	5 (15.6%)	8 (25.0%)	

Table 23 (Continue)

Responses of new fall, 1984 entrants to SMCC without prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 to the telephone survey.

N=32

	Mean=3.47 SD=1.22					
Academic Quality of Advisement at SMCC	Poor	Fair	Neutral	Good	Excellent	NA
	3 (9.4%)	2 (6.3%)	11 (34.4%)	10 (31.3%)	5 (15.6%)	1 (3.1%)
	Mean=4.19 SD=0.86					
Academic Quality of Courses at SMCC	Poor	Fair	Neutral	Good	Excellent	NA
	0 (0.0%)	1 (3.1%)	6 (18.8%)	11 (34.4%)	14 (43.8%)	
	Mean=4.16 SD=0.95					
Academic Quality of Instructors at SMCC	Poor	Fair	Neutral	Good	Excellent	NA
	0 (0.0%)	2 (6.3%)	6 (18.8%)	9 (28.1%)	15 (46.9%)	
	Mean=3.91 SD=0.89					
Social Quality of Friendships at SMCC	Poor	Fair	Neutral	Good	Excellent	NA
	0 (0.0%)	2 (6.3%)	8 (25.0%)	13 (40.6%)	9 (28.1%)	
	Mean=3.56 SD=1.27					
Social Quality of Students	Poor	Fair	Neutral	Good	Excellent	NA
Services at SMCC (3.1%)	2 (6.3%)	4 (12.5%)	10 (31.3%)	7 (21.9%)	8 (25.0%)	1 (3.1%)
	Mean=3.50 SD=1.39					
Social Quality of Students Activities at SMCC (6.3%)	Poor	Fair	Neutral	Good	Excellent	NA
	3 (9.4%)	4 (12.5%)	10 (31.3%)	6 (18.8%)	7 (21.9%)	2 (6.3%)
	Mean=3.78 SD=1.10					
Amount of Personal Growth Achieved at SMCC	None	Almost None	Neutral	Some	A Great Amount	
	1 (3.1%)	3 (9.4%)	8 (25.0%)	10 (31.3%)	10 (31.3%)	

Their main goal for attending SMCC was to improve their present job skills (40.6%) or to transfer to a four-year institution (31.3% in Table 23). On a scale of one-to-five with five being very strong and one being very weak, respondents gave the strength of their goal for attending SMCC a mean rating of 3.69 (Table 23). They rated the achievement of their main goal on a one-to-five scale with a

mean of 3.31 or somewhat above neutral as being somewhat achieved (Table 23). Students rated their degree of satisfaction with having achieved their goals in about equal proportions regardless of whether or not their goal was to improve present job skills (60%) or to transfer (61%). Students whose goal was to pursue a present interest expressed no dissatisfaction with their achievements (Table 24).

Table 24. Main goal of respondents to the telephone survey who were new entrants to SMCC in fall, 1984 and earned at least 12 credits in 100- and 200-level courses by perceived degree of goal achieved.

Please rate how well you achieved your main goal for attending SMCC on a scale of 1 to 5 with 5 being totally achieved and 1 being not achieved at all.			Which of the following was your main goal?			
			Transfer to Four-Year College	Labor Force Entry	Improve Present Job Skills	Pursue Personal Interest
Total Respondents = 95	32		10	5	13	4
	R 100%		11%	5%	14%	4%
	C 100%		100%	100%	100%	100%
Not achieved at All	7		3		4	
	R 100%		43%		57%	
	C 22%		30%		31%	
Somewhat Unachieved	2		1	1		
	R 100%		50%	50%		
	C 6%		10%	20%		
Neutral	5			2	1	2
	R 100%			40%	20%	40%
	C 16%			40%	8%	50%
Somewhat Achieved	10		4	2	3	1
	R 100%		40%	20%	30%	10%
	C 31%		40%	40%	23%	25%
Totally Achieved	8		2		5	1
	R 100%		25%		63%	13%
	C 25%		20%		38%	25%

Their primary occupation or the majority (59.4%) during the first six months after leaving SMCC was continuing to work in the job they already had while they attended SMCC. Six sought work (18.8%). Multiple responses were allowed for the question about occupation about the present time. At the time of the telephone interview, more than two-thirds of the subjects said that they were working full time (78.1%). Nine (28.1%) said that they were attending school part time. There were three more responses in each of four categories: attending school full time, seeking work, staying at home, and working part time. Since all subjects gave at least one response but none gave more than two, four subjects gave multiple responses for a total of 36 responses (Table 23).

After attending SMCC, the majority of respondents terminated their education (62.5%). However, if they did continue at a post-secondary institution, it was more likely to be a two-year college (25.0%) than a four-year institution (21.9%). Respondents were asked about their plans to continue their education. Twelve rated it very likely that they would attend a community college during the next five years, but an additional 12 were neutral (37.5%). Only three (9.4%) said it was very unlikely and none said it was somewhat unlikely that they would attend a community college (Mean=3.72, SD=1.25). However, 31.3% of the respondents would be very unlikely to attend a four-year institution during the next five years, and 37.5% were neutral in response (Mean=2.81, SD=1.53). Although seven respondents indicated that they had attended a four-year institution since leaving SMCC, some individuals might have still been enrolled and therefore not indicated a likelihood to attend a four-year institution. For the rating of the likelihood of obtaining a four-year degree sometime during the next five years, 40.6% indicated that it was somewhat or very likely and an equal percentage indicated that it was somewhat or very unlikely (Table 23).

Respondents were asked to rate three academic and three social qualities of SMCC on a scale of one through five with a five indicating that the quality was excellent and a one indicating that it was poor. The mean for each rating was equal to or greater than 3.47 in each case. The academic quality of the courses (Mean=4.19, SD=0.86) was rated highest, and the academic quality of instructors (Mean=4.16, SD=0.95) was rated next highest. The academic quality of advisement (Mean=3.47, SD=1.22) was rated lowest, and the social quality of student activities was rated next lowest (Mean=3.50, SD=1.39). Finally 10 (31.3%) of the respondents rated the amount of personal growth they had achieved at SMCC as either "some" or as a "greater amount," while only one individual (3.1%) perceived no growth and three (9.4%) perceived almost no growth. Eight (25.0%) were neutral in their perceptions of personal growth (Table 23).

There are no significant differences between the ratings which students give on six scales measuring the social and academic aspects of the college.

There were five significant t-tests at the .05 level of probability for a two-tailed test. Thus, there are differences between the ratings which were given to courses and services ($t=2.31$, probability=.024), courses and activities ($t=2.38$, Probability=.020), and courses and advisement ($t=2.73$, Probability=.008) with the academic quality of courses significantly more highly rated than the social qualities of student services and student activities, and the academic quality of advisement. Also, the academic quality of the instructor was rated significantly more highly than the social qualities of student services ($t=2.15$, Probability=.038) and student activities ($t=2.20$, Probability=.032).

There is no relationship between the scales measuring growth, goal strength, goal achievement, and intent to pursue further post-secondary education during the next five years Figure 10.

A strong, significant positive relationship existed between the independent variable of goal strength and the dependent variable of goal achievement ($r=.486$, Probability $=.005$). An even stronger relationship existed between the dependent variables goal achievement and perception of personal growth ($r=.535$, Probability $=.002$). Expectedly, personal growth and goal strength were also related ($r=.440$, Probability $=.012$). However, growth, goal strength and goal achievement were unrelated to the intent to pursue further post-secondary education during the next five years. The intent to attend a four-year institution was very strongly correlated with the perceived probability of completing a four-year sometime in the next five years, as might be expected ($r=.85$, Probability $=.000$).

There are no significant differences between any of the independent variables as represented by the six scales and the scales measuring goal strength, goal achievement, and intent to pursue further education during the next five years (Figure 11).

No significant relationship existed between the dependent variables of goal achievement and personal growth and any of the independent variables. Ratings based on perceived degree of satisfaction with the six independent variables had 11 significant relationships. Perceived satisfaction with the academic quality of advisement was related to all of the other independent variables: academic qualities of courses ($r=.561$, Probability $=.001$) and instructors ($r=.379$, Probability $=.001$) and social qualities of friendships ($r=.427$, Probability $=.015$), student services ($r=.701$, Probability $=.000$), and student activities ($r=.466$, Probability $=.007$). Significant relationships between perceived

satisfaction with the academic quality of courses was related to four of the five other independent variables including: academic quality of instructor ($r=.555$, Probability $=.001$) and the social qualities of friendships ($r=.444$, Probability $=.011$), student services ($r=.492$, Probability $=.004$), and student activities ($r=.648$, Probability $=.000$). Satisfaction with four social qualities of SMCC were related at a significance level which was greater than .05. The social quality of friendship was related to student services ($r=.532$, Probability $=.002$), and that of student services was related to student activities ($r=.420$, Probability $=.017$).

The independent variables are of no use in predicting the dependent variable goal achievement or the dependent variables goal achievement and personal growth or $H_0: B_1=B_2=B_3=0$.

Predictive models were made using multiple regression. Stepwise regression was calculated using forward selection with the single most salient variable entered first. Since there were a number of strong correlations between the variables, it was expected that the first variable entered into the multiple regression table would account for a large share of the variance. Only two predictors were useful for each model, both because the sample was small and the third variable offered little more predictive power over the second. Goal strength ($R^2=.236$) and G.P.A. ($R^2=.330$) were the strongest predictors of goal achievement ($F=7.144$, Probability $=.003$). An individual's perception of whether or not she/he had achieved his/her initial goal for entrance to the college could be predicted from a knowledge of the strength of that goal upon matriculation and also the achievement the student experienced as measured by G.P.A. In this case, the success of the student could be predicted by finding out how strong the motivation for success was upon entrance, and by looking at the student's G.P.A. upon exit. The student's perceived measure of personal growth could be

predicted by whether or not she/he had achieved his/her goal for attending SMCC ($R^2=.305$) and by the friendships she/he had established at the college ($R^2=.378$ in Table 23). The model yielded an $F=8.506$ with a Probability=.001. Goal achievement, rather than being solely the dependent variable, was also the intervening variable in predicting personal growth.

The two best predictors ($F=15.911$, Probability=.000) of satisfaction with academic advisement were degree of satisfaction with the social quality of student services ($R^2=.494$) and with the academic quality of instructors ($R^2=.541$). The second best predictor of satisfaction with the academic quality of courses was, understandably, satisfaction with instructors ($R^2=.644$). Satisfaction with the student activities was negatively related to satisfaction with instructors and, by itself, contributed nearly half ($R^2=.482$) of the predictive value. Together, these two variables yielded the most highly predictive model ($F=24.375$, Probability=.000) of all. Conversely, satisfaction with courses was the single best predictor of satisfaction with the academic quality of instructor ($R^2=.321$) and student activities was the second entry ($R^2=.357$) but added only 3 1/2% more predictive power to the model ($F=7.505$, Probability=.003).

Satisfaction with the academic quality of advisement ($R^2=.494$) and with the social quality of friendships ($R^2=.757$) combined to compose a highly predictive model for satisfaction with the social quality of student services ($F=18.274$, Probability=.000). G.P.A. was negatively related to satisfaction with student activities ($R^2=.526$), but satisfaction with courses was positively related ($R^2=.482$). The two combined produced a model with an F of 14.992 and a

Probability of .000. The academic quality of courses ($R^2=.343$) yielded very little predictability to satisfaction with friendships ($F=7.232$, Probability=.003) behind the predictive power of satisfaction with the social quality of student services ($R^2=.315$).

CHAPTER III

Discussion of Results and Recommendations

South Mountain Community College (SMCC) was established in 1980 as a small campus located in an urban setting designed to serve a community with a minority constituency that was basically underserved. Since the college was established for ten years, in 1984 it was only four-years old. The population of the institution has also shifted to include more White students and proportionately fewer Black students. The enrollment has almost tripled in the past six years. The offerings of the college and its student services have changed significantly. One mission of the college was that of transfer. Transfer rates have remained almost the same since fall of 1984, but transfer rates have never been particularly high. Typically, students say that they intend to transfer, but few do transfer. In our cohort of 92 students, 58.7% said that their goal was occupational, and 34.8% said that their goal was transfer (Table 2). About the same proportions of community college students nationally indicate these goals as their immediate goals, while three-quarters of students declare transfer as their long-range goal when they are questioned (Cohen, 1988; Pincus and DeCamp, 1989). The question on the Application for Admission at SMCC requests the student's reason for enrolling which would seemingly be categorized as a long-range goal. In that case, students at SMCC would appear somewhat more occupationally motivated than students nationally.

The transfer rate for students in the cohort (7.67%) was lower than the transfer rate for students at community colleges in the Ford transfer assembly cohort of 33 community colleges in which SMCC participated (Banks, 1990). There were 47 students of the 92 in the cohort (51.0%) who earned 24 or more

credits, a substantial number. If students at SMCC stay long enough to earn at least 12 transferrable credits, it is likely that they will stay longer and earn 24 credits. Of the 47, eight (17.0%) transferred. In the Ford Transfer Assembly cohort, 25% of students earning 24 or more credits transferred (Banks, 1990).

At this juncture, when comparing transfer rates, the question needs to be posed about the original intention of the cohort. If the original goal of students was occupational education rather than transfer, then they cannot be counted as eligible for inclusion in calculating transfer rate beyond the number in the cohort who state that their goal is occupational and then still transfer. In this case, 75% of the individuals who did transfer stated transfer as their goal, and a quarter of the transfers expressed occupational goals, so 25% of students who state occupation goals should be counted in the denominator of the equation as eligible transfers along with 100% of the students who declared transfer as their goal. Using the cohort of 92, the denominator would be 45.5 and the numerator 12, yielding a transfer rate of 26.37%. This rate corresponds to the transfer rate for the Ford Transfer Assembly (Banks, 1990). Students who transferred were more than twice as likely to state transfer as their goal than students in the cohort who did not transfer. Goal identification of transfer aspirations enhances the possibility of transfer, while goal identification of occupational aspirations tends to negate transfer.

However, students who stated occupational and students who stated transfer goals expressed almost equal proportions of satisfaction and dissatisfaction with their achievement. Of the 32 students who participated in the telephone survey, 56.3% said their goal was somewhat or totally achieved while 27.2% said that it was somewhat or totally unachieved. The greater number is achieving a portion of its goal. However, respondents tended more

often to answer that their goal was totally unachieved (21.9%) rather than to answer that it was somewhat unachieved (6.3%), connoting a polarity. Therefore, students perceived themselves as either somewhat or totally successful or as totally unsuccessful in achieving their goals.

Recommendations:

1. Determine both long-term and short-term goals for students.
2. Counsel and advise students on the basis of their stated goals.
3. Formulate an individual program of study for each incoming student.
4. Assess each incoming student to determine academic strengths.
5. Help students clarify goals based on their strengths as measured by assessment and make sure that goals stated at matriculation correspond with those stated at assessment.
6. Monitor the progress of each student by using a computer program to see if she/he is achieving his/her goal during each semester by taking appropriate classes.
7. Advise students after they have attended the institution for two consecutive semesters to re-evaluate their goals and re-assess their individual program of study.
8. Create a transfer club for those students whose goal is transfer and who have attended the institution for two consecutive semesters.

The purpose of the study was to identify and describe a cohort of students from a balanced minority community college in an urban locale. The study attempted to follow-up a group of students who were new to post-secondary education so prior experience did not contaminate their expectations and to follow-up only those students who had enough experience at that one college for

it to have affected their behavior and their opinions, regardless of whether or not they subsequently attended other post-secondary institutions.

Student who enter SMCC as new students with no prior college experience and who accumulate at least 12 credit hours in transferrable classes tend to be significantly younger than those students who are also new entrants with no prior college experience. They enter SMCC immediately after completing high school, and they also tend to remain at SMCC until they have accumulated 12 or more credit hours with 60.9% having attended only one MCCD college. Therefore, new entrants who are older choose not to remain at the college long enough to accumulate 12 or more transferrable credits. From other SMCC reports, older students tend more often to be part time and to attend evening courses than younger students who tend more often to be full time and to attend during the day. Younger students attend longer than older students, and the only post-secondary experience most of this youthful population will have is at SMCC.

Recommendations:

9. Provide programs for younger students to come to attend college programs and courses while they are still in high school.
10. Both go to the campuses of the five main feeder high schools to recruit and bring groups of students from the five main feeder high schools to campus in order to be recruited.
11. Maintain a list of interested students in order to send them materials, to encourage them to register and to make appointments by telephone.
12. Identify a particular high school counselor at each of the five main feeder high schools as articulation coordinator.

13. Assign an individual to each new high school recruit to guide them physically through orientation, advisement, assessment, application for financial aid and registration.

14. Bring parents of students from the five main feeder high school and give them information about programs and hold workshops to help them complete financial aid forms.

15. Have a series of social mixers, concerts, fashion shows, carnivals, fund raisers, clubs, meetings, and talks which appeal primarily to students of a particular age groups.

16. Provide services which appeal primarily to students of a particular age group, including child care, transportation and security services, and offer these at different times during both day and evening hours.

17. Provide work-study programs for younger students and book stipends for older students as a financial incentive.

Although there was no significant difference in the racial composition between the 92 in the cohort and the 530 new entrants, 39.1% of the cohort were Black, 35.9% were Hispanic, and 18.5% were White. Most entrants with GED status were Hispanic and most entrants with mature status were Black, but most of the cohort were high school graduates or transfers. Proportionate to their numbers, Blacks tended to earn low G.P.A.'s and Whites to earn high G.P.A.'s while Hispanics and Asians earned G.P.A.'s exactly proportional to their numbers. Students below age 20 also tended to earn lower G.P.A.'s than did older students.

Recommendations:

18. Provide specific tutoring services and study skill seminars for students under age 20 and for Blacks.

19. Give younger students and Black students increased individualized attention in courses and make certain that they know course requirements and complete all assignments thoroughly.

20. Have student mentoring programs which pair younger with older students and Black students with Hispanic, White, and Asian students.

21. Contact successful and satisfied college leavers of similar age, sex, and ethnicity to serve as role models from the community.

22. Encourage the formation of classroom study groups.

When the cohort was divided into two sub-samples, there were no significant difference in the age, sex, or ethnic composition between the sub-sample with 12 to 23 and the sub-sample with 24 or more earned credits. However, subjects with 12 to 23 credits tended to be younger than those with 24 or more credits. Hispanics were most represented among those with 12 to 23 and Blacks most represented among those with 24 or more. Although the proportion of students earning a G.P.A. of 3.0 or above was about the same for the two categories of earned credits, the proportion of students with 12 to 23 credits earning a G.P.A. of less than 2.0 (28.9%) was much greater than was the proportion of students with 24 or more credits (14.9%). Using a disaggregated cohort, those Blacks who earned 24 or more credit hours also earned a higher G.P.A. than Blacks who earned fewer than 24 credits. More of those earning 24 or more credits had attended only SMCC and had taken no developmental credits than had those earning 12 to 23 credits, but the majority in each of the sub-samples had attended only SMCC and had earned no developmental credit. The

greater difference which the number of units made upon subsequent behavior was the difference in the transfer behavior between the two sub-groups. Of subjects who took 24 or more credits, 17.0% transferred, but of subjects who took 12 to 23 credits, 8.8% transferred. Transfer is enhanced among those who remain at the college and accumulate the larger number of credits.

Recommendations:

23. Meet with students who have accumulated 12 transferrable credit hours, regardless of their stated goal, to begin a program designed to inform them about transfer.

24. Assign an advisor or faculty mentor to each student who has accumulated 12 transferrable credits.

25. Help students who have accumulated 24 transferrable credit hours to implement the transfer mechanism.

26. Encourage the persistence of students by awarding a 24 credit-hour certificate, book, or pin at a luncheon.

27. Review the program of study for students who have completed 24 total credits to enable them to perceive how they can complete a certificate or a degree.

From the data in the study, the chance of transfer increased with these demographics: male, single, Black or Hispanic, older than age 19, and a high school graduate. Chances of transfer also increase if the subject intended to transfer, attended more than one MCCD college, earned a G.P.A. over 2.5, took few developmental courses, and accumulated 24 or more credit hours. Conclusions based upon a sample size of 12 might be misleading. According to the data in Table 1 of the new transfers to ASU from SMCC, males and females

tend to transfer in equal numbers, but not according to the data derived from the cohort. Thus, no recommendations were made on the basis of this data.

There were 40 students of the 530 who were new entrants and did accumulate 12 or more credits, but were excluded from the cohort since fewer than 12 of the credits they earned were transferrable. Non-transferrable courses are developmental and teach skills required for successful completion of transferrable courses which are equivalent to those taught during the first two-years at a university. There was a significant difference in age between the 40 students and the age of the 92 in the cohort with the 40 students being significantly older. There were no differences in the ethnic or sex composition of the two groups.

Recommendations:

25. Provide training in assertiveness and self-confidence for older adults enrolled in developmental courses.

26. Once a student has taken developmental prerequisites, appoint a student mentor of the same age, sex, and ethnicity who is enrolled in transferrable courses to assist students in making a transition into transferrable classes.

27. Arrange a visit for students to the next higher course in a sequence or have them view a videotape of a sample lesson.

28. Give criterion referenced pre- and post-tests in all developmental classes and encourage those achieving the criterion to progress to the next level.

30. Administer the same measures used for matriculation assessment at the end of a sequence of developmental courses and register those achieving scores adequate for entrance in transferrable courses.

In addition to describing members of the cohort and their transfer behavior, respondents to the telephone follow-up survey were asked to share information about their occupation six months and five years after leaving the college, their perceptions about achieving their goals at the college and its impact upon their personal growth, their satisfaction with the social and academic environment of the institution, their post-secondary attendance after leaving SMCC, and their post-secondary attendance and achievement projections for the next five years. The response rate of 34.8% was good after a five-year interval, especially considering the mobility rate in the greater Phoenix metropolitan area. The low rate of mobility does, however, signify that this population possibly has ties to the area through kinship, friendship, familiarity, and employment. The respondents in the telephone survey were not representative of the cohort, because there were disproportionately more males. Females might have been more difficult to contact, because they might have married or left home and changed their telephone number whereas males might have been more likely to keep the same telephone number for five years.

Before attending SMCC, most respondents were working (46.9%). Their main goal for attending SMCC was to improve their present job skills (40.6%). Six months after they left SMCC, the majority (59.4%) continued to work in the job they had while they attended. This is indicative of the predicted lack of mobility on the part of subjects. At the time of the telephone interview, 78.1% of respondents were working full time, as well as pursuing other interest including attending school part time (28.1%) or full time (9.4%). The mean rating for perceived goal achievement at SMCC was slightly above neutral as was validated by the continued attendance of 37.5% of respondents at a post-secondary institution. Subjects who had not achieved their goal were persisting in

pursuing it. This finding attests to the contention of Cohen (1988a) and Pincus and DeCamp (1989) that community college students have long-range goals which might take years to fulfill. The portion of the sample who are not currently pursuing higher education, but who say that it is their intention in the next five years to re-enroll, can be considered stop-outs. The experience of students at SMCC obviously provided motivation to continue post-secondary education rather than to cease. It can be assumed that those who had achieved their goals, who were subject to forces which exerted a pull away from education, or who had non-productive educational experiences did cease their education. This is a credible measure of the SMCC experience as an intervening variable in educational persistence.

Responses to question about future educational plans during the next five years were somewhat puzzling. It was clear that if respondents did pursue additional education they would be more likely to attend a two-year college than a university. There is comfort with the experience they have had already. The largest number were neutral about the possibility of their attending a university (37.5%). However, over forty percent indicated that it was to some degree likely that they would obtain a four-year degree, but were ambivalent about how they will obtain it. Community colleges can help alumni clarify how they will achieve their goals through planful action. The responsibility of the community college does not end once students have physically left, because psychologically students have been imprinted with experience which, for the most part, have been positive. When researchers spoke with the subjects for the study, they demonstrated affiliative concern by making productive comments about SMCC, aside from just responding to the questionnaire. Therefore, there are many

possibilities to provide services for students who have left, but who have future goals and who may return.

Recommendations:

31. Maintain a continuing follow-up of students to assess the success of the institution in meeting student goals.

32. Offer programs of study and courses which meet general education requirements and also have utilitarian value.

33. Conduct a follow-up of students to determine their subsequent college attendance and employment patterns in order to project their future educational needs at the community colleges.

34. Hold seminars for alumni to help them realistically develop a five-year plan to obtain a four-year degree or to decide what educational course to pursue over the next five years.

35. Invite students who have stopped-out for one or two semester to a special day and evening session to re-enroll and to receive a discount at the bookstore.

36. Develop an alumni association with a newsletter publicizing achievements of alumni, college programs, personnel, and events and an alumni board.

37. Develop a community college alumni association of transfer students or a university alumni association of transfers from community colleges.

The ratings which the respondents gave to the social and academic qualities of the college are useful for assessment. Respondents gave the highest ratings to the academic quality of courses and of instructors, and they gave the lowest ratings to the academic quality of advisement and of student activities. It

should be recalled that the college was only four years old when respondents matriculated and that the auxiliary student services have developed over the years. Respondents rated all of the six variables toward the positive end of the scale ($M > 3.47$) on a five-point Likert-like scale. Also, the business of the college is education. If students are most satisfied with the academic experience of their education which occurs in the classroom, then the college is accomplishing its educational mission effectively. It has been demonstrated that commuter students in two-year colleges are positively affected to persist by being academically integrated into the environment (Bean and Metzner, 1987; Pascarella and Chapman, 1983). The results of these studies is substantiated by the results of the present study. The cohort of students for this study were persisters, and they were more positive about their academic experience than they were about their social experience at SMCC.

Most students were positive about the amount of personal growth which they achieved at SMCC with only one individual perceiving no growth. Respondents were more positive in rating the amount of their personal growth ($M = 3.78$) than in rating achievement of their main goal for attending SMCC ($M = 3.31$). These students attest to the findings in the literature that college has an impact upon the individual beyond that of the academic agenda or even the agenda which students bring with them as an expectation for their education (Terenzini and Wright, 1987; Terenzini, Theophilides, and Lorang, 1984).

There was no correlation, however, between goal achievement and between personal growth, the dependent variables, and any of the six attributes of the college, the independent variables. The activities of the college did little to effect the perceived outcomes of a student's education. It is not clear, however, what impact either extremely poor or excellent social and academic variables

might make upon goal achievement and personal growth. The results show that they had no significant effect, a finding which although discouraging for institutional assessment, makes intuitive sense. In the multiple regression models, G.P.A. and strength of goal predicted goal achievement. Students come to the college with a level of goal strength internalized, and then grades which are awarded are a tangible measurement of achievement which, although they are external judgments, may be internalized by students. The respondents for this study did rate the strength of their goal five years after rather than at the time of matriculation, so their judgments about their goal achievement may have been contaminated both by time and the grades they had already received. Goal achievement and friendships were predictors for personal growth. For making a larger model, goal achievement then becomes an intervening variable with indirect effects on personal growth.

There were 11 correlations among the three social and three academic factors. Consequently, one variable usually provided at least 31% of the predictive power when entered into forward stepwise regression and, while the second variable entered improved predictability somewhat, subsequent variables had marginal predictive power. The models demonstrate that perceived degree of satisfaction with one college service impacts perceptions about another area of service. For example, if a student receives helpful and supportive advisement, she/he will tend to perceive student services more positively.

Recommendations:

38. Offer students the opportunity to clarify their educational goals and to measure goal commitment during their orientation, assessment, advisement or their English composition courses.

39. Provide areas of campus where students can form friendships such as lounges, food and beverage areas, and game rooms with interactive rather than video games, and organize activities such as clubs, recreational groups, student government, and student task forces.

40. Ensure that the awarding of grades is rewarding and meaningful by making grade requirements clear in the course syllabus and by setting competency requirements in each course including those which are developmental pre-requisites and those which are transferrable.

41. Give adequate practice in competency areas; teach skills in ascending order of difficulty in manageable increments; and award points for each assignment as a basis for grading.

42. Have a friendly atmosphere throughout the campus and make all services student centered by relating to each problem with positive solutions and each human being as an individual.

43. Measure student satisfaction with registration, advisement, tutorial services, special programs, courses, and other services by means of a brief, scannable exit survey.

44. Periodically assess student satisfaction with academic and social factors of the campus to enhance institutional performance by forming focus groups.

45. Make predictive models for student goal achievement from available data about student background characteristics, G.P.A. and satisfaction with the institution.

46. Make predictive models for academic integration from available data about student background characteristics and satisfaction with the institution.

47. Compare retention and transfer rates of yearly cohorts using existing data among different categories by goal, student background characteristics, G.P.A., and number of credits earned.

48. Measure the impact of orientation, tutorial programs, mentoring, and other special programs upon student attitude, performance, retention, and goal achievement.

A point which needs to be reiterated at the close of this research report is that transfer is only one part of the mission of the community college, although its importance is undeniable. Students entering the community college should be asked both their immediate and long-term goals upon matriculation and the strength of their motivation to pursue these goals. Transfer rates can then be based upon those students who are eligible to transfer by declaring it as their primary agenda and as an agenda of paramount importance in their life at the present time. In this study, one-quarter of the time students who did not declare transfer as their primary goal did indeed transfer. Therefore, a quarter of students with other intentions should be included in projecting a transfer rate for SMCC. While tracking a cohort of students through a period of time reasonable for them to attain transfer is an excellent way to accrue longitudinal data, conclusions based upon the results of one or two cohorts may be misleading. Also, as in all research, description is useful but explanation coupled with description is more powerful. Community colleges need to be able to measure the goal achievement of their students and to assess the impact of the collegiate experience upon personal growth and to make models which predict what impact particular factors in the collegiate experience will have upon student achievement and growth, as well as upon transfer. Community college students are apt to take many detours and to make many interim decisions as

the result of external pressures, but the community college experience not only influences their transfer behavior and their plans for continuing education but also their perceptions of themselves as successful and developing individuals.

REFERENCES

- Altieri, Guy (1990). "A structural model for student outcomes: Assessment programs in community colleges," Community College Review, 17(4), 15-21.
- Banks, Debra L. (1990). "Why a consistent definition of transfer?" Community College Review, 18(2), 47-53.
- Bean, John P., and Bradley, Russell K. (1936). "Untangling the satisfaction-performance relationship for college students," Journal of Higher Education, 57(4), 393-412.
- Clagett, Craig A. (1989). "Student goal analysis for accountability and marketing," Community College Review, 16(4), 38-41.
- Cohen, Arthur M. (1988). Trends and issues in community colleges, 1988: Minority student transfer. Los Angeles: ERIC Clearinghouse for Junior Colleges. (ERIC Document No. ED 293 588).
- Cohen, Arthur M. (1988). "Degree achievement by minorities in community colleges," Review of Higher Education, 11(4), 383-402.
- Cotnam, John D., and Ison, Sherrill (1988). A follow-up study of non-returning students. Rochester, N. Y.: Monroe Community College, Office of Institutional Advancement. (ERIC Document No. ED 291 435).
- de los Santos, Alfredo G., Jr., and Wright, Irene (1989). "Community college and university student transfers," Educational Record, 70, 82-84.
- Giles-Gee, Helen F. (1989). "Increasing the retention of black students: A multimethod approach," J. of College Student Development, 30, 196-200.
- Higgerson, Mary Lou (1985). "Understanding why students voluntarily withdraw from college," NASPA Journal, 22(3), 15-21.
- Johnson, Naomi T. (1987). "Academic factors that affect transfer student persistence," J. of College Student Personnel, 28(4), 323-329.
- Lichtman, Cary M.; Bass, Alan, R., and Ager, Joel W., Jr. (1989). "Differences between black and white students in attrition patterns from an urban commuter university," J. of College Student Development, 30(1), 4-9

- Mabry, Theo N. (1988). "A case study in enrollment management: An ERIC review," Community College review, 16(1), 47-53.
- McIntyre, Chuck (1987). "Assessing community college transfer performance," Research in Higher education, 27(2), 142-162.
- Mertes, Barbara F. (1985) Focusing on articulation: Improving the community college transfer rate. Sacramento: California State Department of Education. (ERIC Document No. ED 301 283).
- Metzner, Barbara S., and Bean, John P. (1987). "The estimation of a conceptual model of nontraditional undergraduate student attrition," Research in Higher Education, 27(1), 15-38.
- Nettles, Michael T., Theony, A. Robert, and Gosman, Erica J. (1986). "Comparative and predictive analyses of black and white students' college achievement and experiences," J. of Higher Education, 57(3), 289-318.
- Nolan, Bernie (1989). "Who knows where the path leads?: Educational goals and student success," Community College Review, 17(3), 44-49.
- Nora, Amaury (1987). "Determinants of retention among chicano college students," Research in Higher Education, 26(1), 31-59.
- Palmer, Jim (1987). "Bolstering the community college transfer function: An ERIC review," Community College Review, 14(3), 53-63.
- Pincus, Fred L., and DeCamp, Suzanne (1989). "Minority community college students who transfer to four-year colleges: A study of a matched sample of B.A. Recipients and non-recipients," Community/Junior College, 13, 191-219.
- Pascarella, Ernest T., and Chapman, David W. (1983). "A multiinstitutional, path analytic validation of Tint's model of college withdrawal," American Educational Research Journal, 20(1), 87-102.
- Pascarella, Ernest T.; Smart, John C., and Ethington, Corinna A. (1986). "Long-term persistence of two-year college students," Research in Higher Education, 24(1), 47-71.
- Rendon, Laura I., and Nora, Amaury (1989). "A synthesis and application of research on Hispanic students in community colleges," Community College Review, 17(1), 17-24.

- Rendon, Laura I., and Others (1988). Transfer education in Southwest border community colleges, Final report of the Ford Southwest transfer education Research Project. Columbia, S.C.; Columbia College of Education. (ERIC Document No. Ed 296 748).
- Riegle, Robert M., and Williams, Douglas F. (1990). "Students on the move: An articulation transfer information feedback model," Community/Junior College, 14, 101-114
- Schmitz, Constance C., and del Mas (1989). Everything you always wanted to know about transfer rates but were afraid to ask, Minneapolis, Minnesota University. (ERIC Document No. ED 308 895).
- Smart, John C., and Pascarella, Ernest T. (1987). "Influences on the intention to reenter higher education," J. of Higher Education, 58(3), 306-322.
- Terenzini, Patrick T.; Theophilides, Christos, and Lorang, Wendell G. (1984). "Influences on students' perceptions of their personal development during the first three years of college," Research in Higher Education, 21(2), 178-193.
- Terenzini, Patrick T., and Wright, Thomas M. (1987). "Students' personal growth during the first two years of college," Review of Higher Education, 10(3), 259-2271.
- Tinto, Vincent (1988). "Stages of student departure," J. of Higher Education, 59(4), 438-455.
- Vaala, Leslie (1989). "Preference of transfer students for a transfer program," Community College Review, 16(4), 28-37.
- Voorhes, Richard A. (1987). "Toward building models of community college persistence: A logic analysis," Research in Higher Education, 26(2), 115-129.
- Webb, Melvin W., II (1988). "Freshman year retention at three campuses of large urban community college district: 1983-1986," Community/Junior College Quarterly, 12, 213-242.
- Webb, Mel (1989). "A theoretical model of community college student degree persistence," Community College Review, 16(4), 42-49.

Winter, Gene M., and Fadale, LaVerna M. (1986). "Noncompleters/successful leavers," Community/Junior College Quarterly, 10, 101-111.

Wright, Irene (1990). Transfer among and into MCCD. Phoenix: Report by MCCD Office of Articulation and Transfer.

APPENDIX A
LETTER TO FORMER STUDENTS



7050 SOUTH 24TH STREET
PHOENIX, ARIZONA 85040
602 243 8000
May 12, 1990

Dear Former Student,

We are conducting a telephone survey to find out about your educational and employment experiences before you came to SMCC, while you were here, and after you left. The survey is being sponsored by the Ford Foundation. Since the size of the sample is small, it is important that you respond. The survey takes about twelve minutes to complete.

Please call us at 243-8047 at any time to leave a message giving us your telephone number and the day of the week and hour we can contact you.

Thank you very much for your cooperation.

Truly yours,

A handwritten signature in cursive script that reads "Susan Starrfield".

Susan Starrfield, Ph D.
Researcher

APPENDIX B
FORMER STUDENT TELEPHONE SURVEY CARD

HELLO! PLEASE LEAVE YOUR
NEW PHONE NUMBER AND THE
BEST TIME FOR US TO CALL.



We have been trying to reach you.

As a former student at South Mountain Community College, you have important information to share. We want to improve our services and we want to listen to your ideas.

Please telephone us at 243-8047. We will call you again in three weeks.

Thank you for your help.

Susan Starrfield
Susan Starrfield

05.F2(X817)

APPENDIX C
CODE FOR TELEPHONE PORTION OF
FORD GRANT FORM

Code for Telephone Portion of Ford Grant

Social Security Number _____

1-8. Before you attended South Mountain Community College, what were you doing primarily? (One answer)

Attending high school _____
Attending another community college _____
Attending a university _____
Seeking work _____
Working _____
Staying at home _____
Serving in military _____
Other _____

9. Which of the following was your main goal in attending SMCC?

Transfer to a four year college _____
Prepare to enter the job market _____
Improve your present job skills _____
Change careers _____
Pursue personal interests _____

10. Please rate the strength of your main goal in attending SMCC which you just said was _____ on a scale of 1 to 5 with 5 being very strong and 1 being very weak.

1..... 2..... 3..... 4..... 5.....
a_____ b_____ c_____ d_____ e_____

11. Please rate how well you achieved your main goal for attending SMCC on a scale of 1 to 5 with 5 being totally achieved and 1 being not achieved at all.

1..... 2..... 3..... 4..... 5.....
a_____ b_____ c_____ d_____ e_____

12-16. Which other school(s) did you attend since you left SMCC? You may choose more than one answer.

None _____
Another two year college _____
A four year college _____
Private or proprietary training school _____
Other _____

17. For the first six months after you left SMCC, which of these was your primary occupation? Please choose one answer.

Looking for work _____
Continuing in the job you had already _____
Attending school _____
Staying at home _____
Other _____

18-23. Which of these are you now doing? You may choose more than one answer.

Seeking work _____
Working part-time _____
Working full-time _____
Attending school part-time _____
Attending school full-time _____
Staying at home _____

24-26. Please rate the likelihood of you doing each of the following during the next five years on a scale of 1 to 5 with 5 being very likely and 1 being very unlikely.

	1...	2...	3...	4...	5...
Taking courses at a community college	a _____	b _____	c _____	d _____	e _____
Transferring to a four year college	a _____	b _____	c _____	d _____	e _____
Completing a four year degree	a _____	b _____	c _____	d _____	e _____

27-29. Please rate the following academic qualities of SMCC on a scale of 1 to 5 with 5 being excellent and 1 being poor.

	1.....	2.....	3.....	4.....	5.....
Advisement	a _____	b _____	c _____	d _____	e _____
Courses	a _____	b _____	c _____	d _____	e _____
Instructors	a _____	b _____	c _____	d _____	e _____

30-32. Please rate the following social qualities of SMCC on a scale of 1 to 5 with 5 being excellent and 1 being poor.

	1.....	2.....	3.....	4.....	5.....
Friendships	a _____	b _____	c _____	d _____	e _____
Student Services	a _____	b _____	c _____	d _____	e _____
Campus Activities	a _____	b _____	c _____	d _____	e _____

33. Please rate the amount of personal growth you achieved at SMCC on a scale of 1 to 5 with 5 being a great amount and 1 being none at all.

1.....	2.....	3.....	4.....	5.....
a _____	b _____	c _____	d _____	e _____

Thank you for your help.

Page 2

Code for Non-Telephone Portion of Ford Grant

Social Security Number _____

50. Number of credits earned in 100 and 200 level courses at SMCC

1-11 _____
12-23 _____
24 or more _____

51. Number of credits earned at SMCC

1-11 _____
12-17 _____
18-23 _____
24-34 _____
35 or more _____

52. Number of credits earned in developmental courses at SMCC

0 _____
1-3 _____
4-6 _____
7-9 _____
10 or more _____

53. Total number of community colleges attended

SMCC only _____
2 _____
3 _____
4 or more _____

54. Sex

Male _____
Female _____

55. Age at entrance in Fall, 1984

0-19 _____
20-25 _____
26-35 _____
36-45 _____
46 or more _____

56. Ethnicity

Asian _____
Black _____
Hispanic _____
White _____
Other _____

57. Status at Entry

College transfer _____
High school graduate _____
GED _____
Concurrently enrolled _____
Maturity _____

58. G.P.A

0-1.9 _____
2.0-2.4 _____
2.5-2.9 _____
3.0-3.4 _____
3.5 or above _____

59. Transferred to Arizona State University

Yes _____
No _____

Contact Record

Phone Number #1 _____
Phone Number #2 _____

Attempts to Contact Subject

Date and Day	Hour		Result	Comments
1. _____	_____	am pm	_____	_____
2. _____	_____	am pm	_____	_____
3. _____	_____	am pm	_____	_____
4. _____	_____	am pm	_____	_____
5. _____	_____	am pm	_____	_____

APPENDIX D
FIGURES

- 100 -

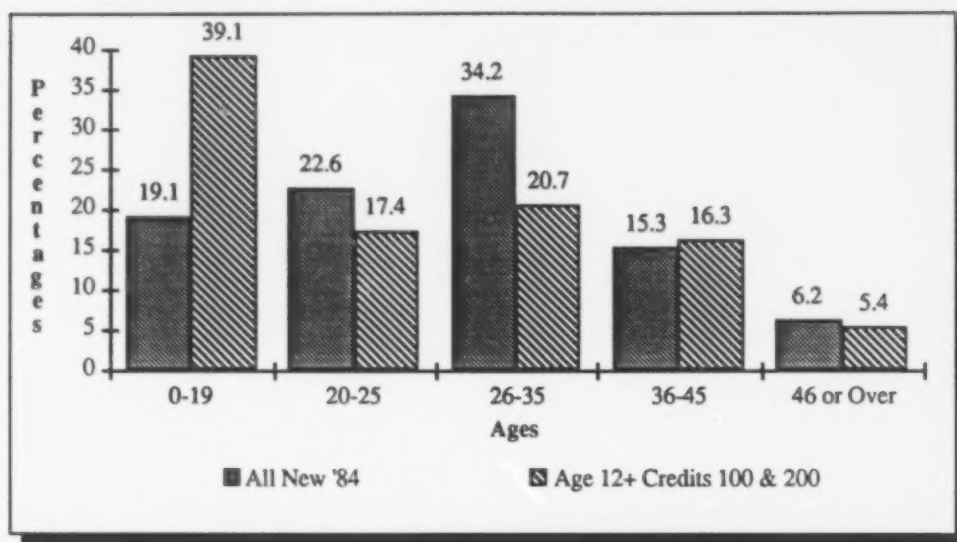


Figure 1. Age of all new fall, 1984 entrants to SMCC compared with age of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC.

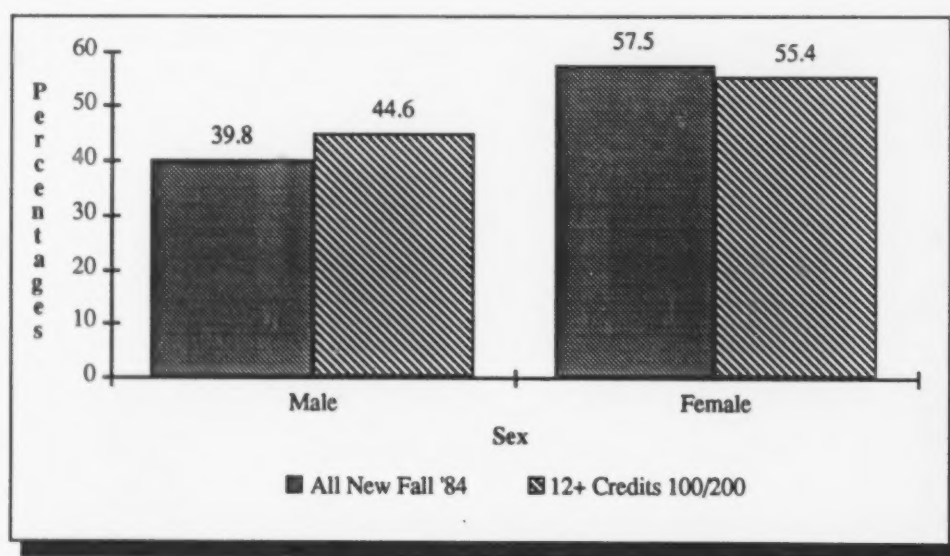


Figure 2. Sex of all new fall, 1984 entrants to SMCC compared with sex of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC.

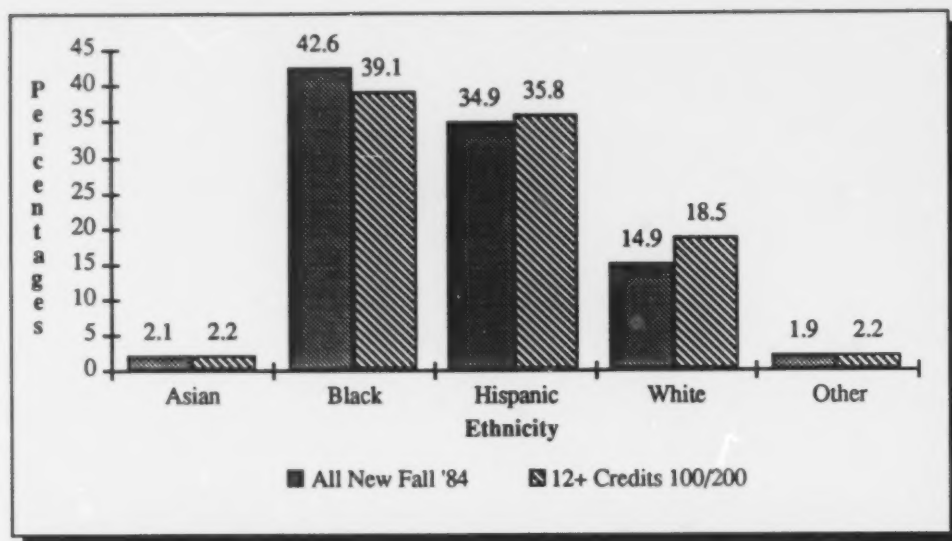


Figure 3. Ethnicity of all new fall, 1984 entrants to SMCC compared with ethnicity of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC.

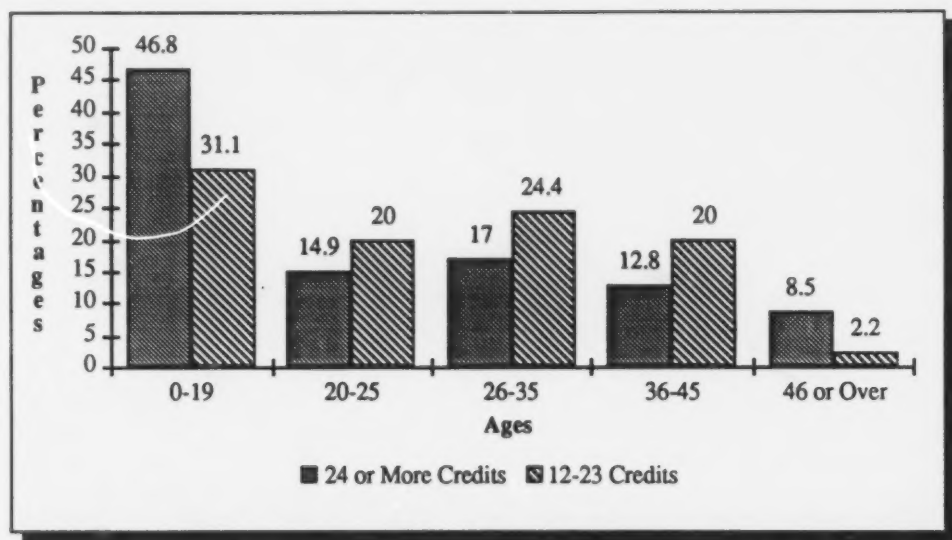


Figure 4. Age of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 24 credits at SMCC, with at least 24 credits in 100- or 200-level classes, by fall 1990 compared with age of students who earned at least 12 credits in 100- or 200-level classes by fall, 1990.

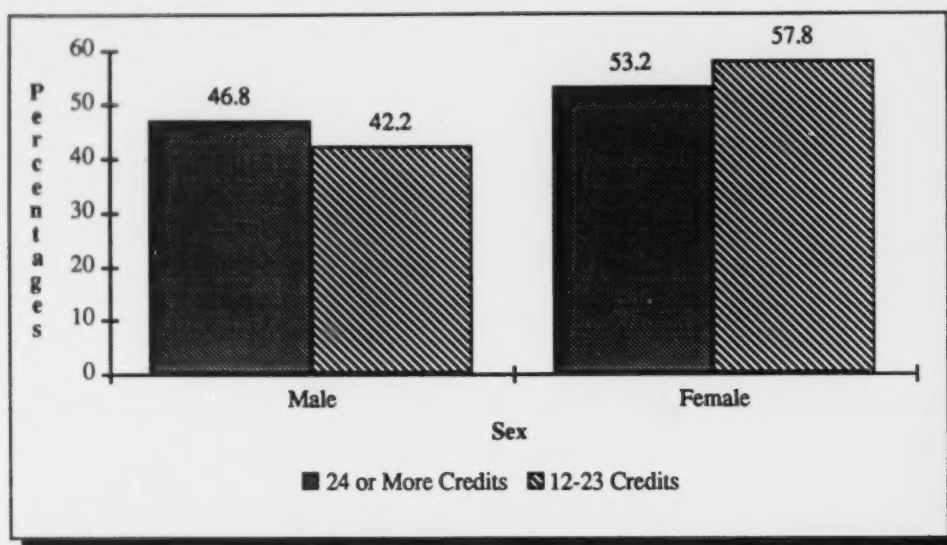


Figure 5. Sex of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 24 credits at SMCC, with at least 24 credits in 100- or 200-level classes, by fall 1990 compared with sex of students who earned at least 12 credits in 100- or 200-level classes by fall 1990.

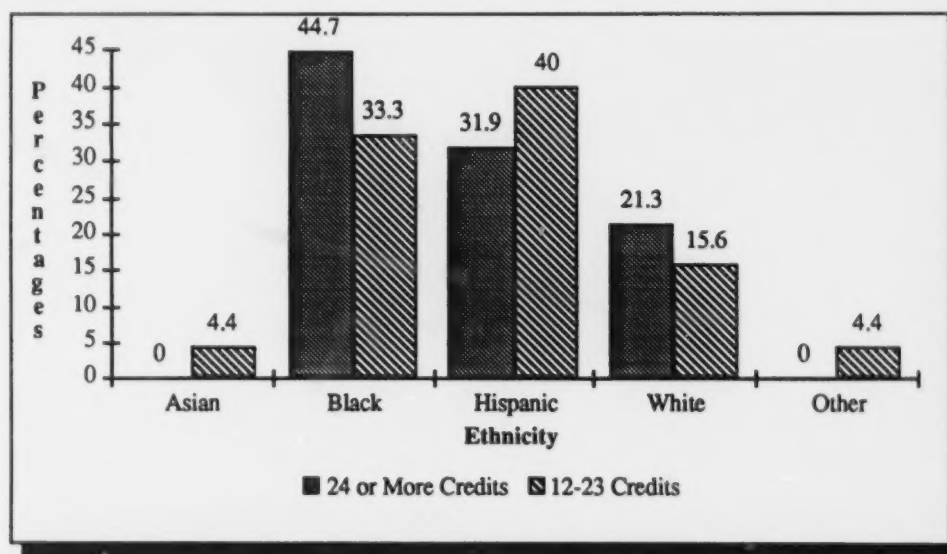


Figure 6. Ethnicity of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 24 credits at SMCC, with at least 24 credits in 100- or 200-level classes, by fall 1990 compared with ethnicity of students who earned at least 12 credits in 100- or 200-level classes by fall 1990.

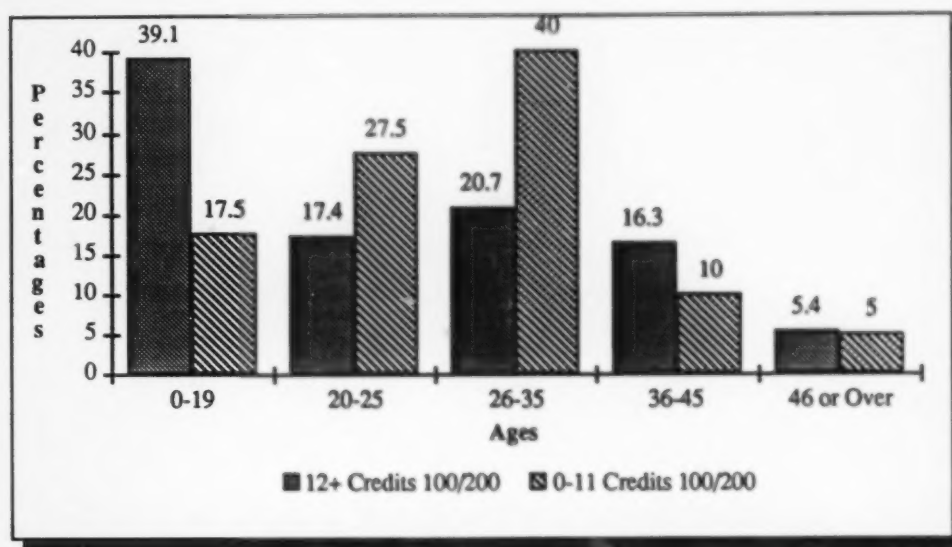


Figure 7. Ages of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 compared with age of students who earned at least 12 credits in 100- or 200-level classes by fall 1990.

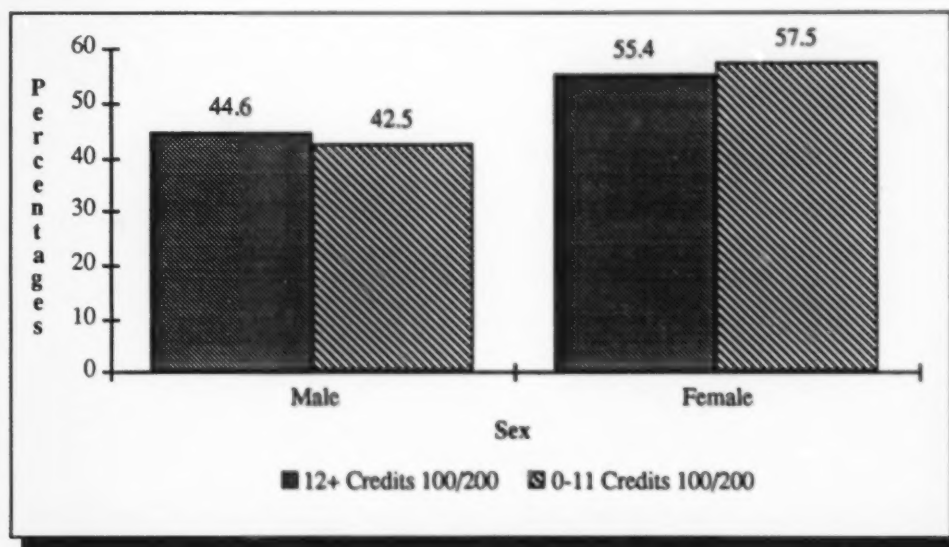


Figure 8. Sex of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 compared with sex of students who earned at least 12 credits in 100- or 200-level classes by fall 1990.

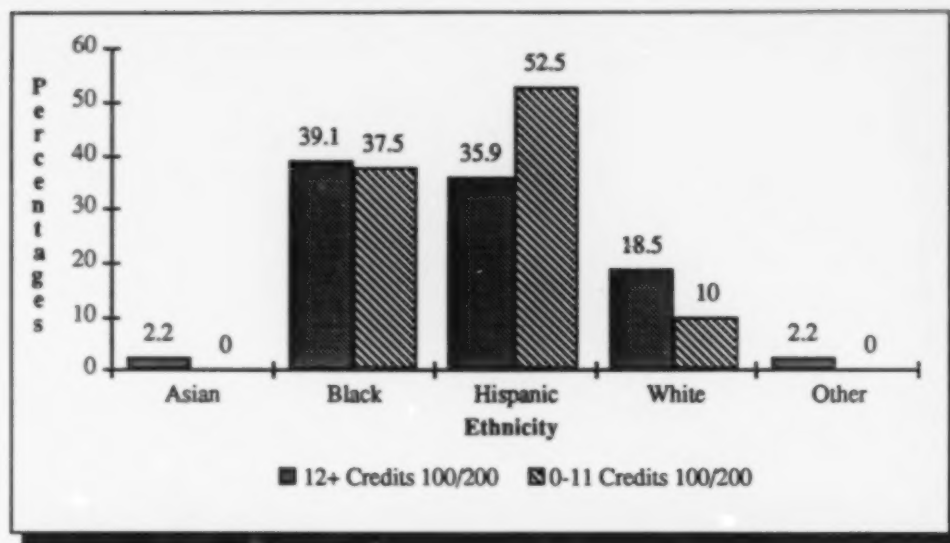


Figure 9. Ethnicity of new fall, 1984 entrants to SMCC with no prior college experience who earned at least 12 credits in 100- and 200-level classes at SMCC by fall, 1990 compared with ethnicity of students who earned at least 12 credits in 100- or 200-level classes by fall 1990.

Variables:					
Growth	1.00000				
Goal Strength	0.44052	1.00000			
Prob	0.0116				
N	32				
Goal Achieved	0.53518	0.48556	1.00000		
Prob	0.0016	0.0048			
N	32	32			
Community College	0.25886	-0.17998	0.03137	1.00000	
Prob	0.1526	0.3243	0.8647		
N	32	32	32		
Attend University	0.01316	0.05871	-0.7234	0.05574	1.00000
Prob	0.9430	0.7496	0.6940	0.7619	
N	32	32	32	32	
Four-Year Degree	0.08903	0.08569	0.01803	0.01177	0.85204
Prob	0.6280	0.6410	0.9220	0.9490	0.0000
N	32	32	32	32	32
	Growth	Goal Strength	Goal Achieved	Com. College	Attend Univ.

Figure 10. Correlation matrix of relationship between perceived growth at SMCC, goal strength, goal achievement, and plans to attend a community college or to attend a four-year university or to earn a four-year degree during the next five years.

Variables:

Goal Achieved	1.00000								
Growth	0.53518	1.00000							
Prob	0.0016								
N	32								
Advisement	0.14773	0.10316	1.00000						
Prob	0.4197	0.5742							
N	32	32							
Courses	0.25508	0.28393	0.56087	1.00000					
Prob	0.1588	0.1153	0.0008						
N	32	32	32						
Instructor	0.28212	0.31042	0.37917	0.55349	1.00000				
Prob	0.1177	0.0838	0.0323	0.0010					
N	32	32	32	32					
Friends	0.14390	0.33988	0.42737	0.44419	0.28279				
Prob	0.4320	0.0570	0.0147	0.0109	0.1168				
N	32	32	32	32	32				
Services	0.29645	0.29928	0.70094	0.49220	0.27155	1.00000			
Prob	0.0994	0.0961	0.0000	0.0042	0.1327	0.53223	1.00000		
N	32	32	32	32	32	32	32		
Activities	0.10889	0.09491	0.46651	0.64782	0.20657	0.27265	0.42045	1.00000	
Prob	0.5530	0.6054	0.0071	0.0000	0.2566	0.1311	0.0166		
N	32	32	32	32	32	32	32	32	
	Goal Achiev	Growth	Advisement	Courses	Instructor	Friends	Services	Activities	

Figure 11. Correlation matrix of relationship between achievement of main goal for attending SMCC, perceived personal growth, and perceived satisfaction with the academic qualities of advisement, courses, instructors, and the social qualities of friendships, student services, and student activities at SMCC.